THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXVIII. NEW YORK, SATURDAY, JANUARY 11, 1896. No. 2.

ORIGINAL ARTICLES.

THE NATURE AND TREATMENT OF MAMMARY NEOPLASMS.[1]

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WE shall probably never arrive at anything like unanimity in our treatment of mammary neoplasms until we come to some definite understanding of their nature and morphological significance. And I believe that a too close following of microscopic appearances, and the attempt to classify each apparent variety as a distinct entity, have tended, and are tending, rather to lead us away from a true understanding of their real nature and consequent rational treatment.

We have divided tumors broadly into two classes, benign and malignant, and made many varieties or subdivisions of each class. Some of these varieties are generally conceded to be improperly named and classified; and there is much evidence, I may say even positive proof, to show that a given tumor may pass from one variety into another, or even from the one broad class of benign tumors to the other broad class of malignant growths.

I shall confine my remarks to some of the more common solid growths met with in the mammary gland, and endeavor to show the real similarity of structure in tumors that have been separately classified and that have at first sight markedly different anatomical characters. The most common tumor of the breast, the so-called adenoma, differs at first sight from the normal gland only in having a greater amount of connective tissue interposed between the glandular elements and in more or less irregularity in size and shape of these glandular elements.

But, as pointed out by Rannier, Virchow, and others, the vast majority of adenomata are really a growth of connective tissue into the tubular interspaces, and should properly be called fibrous, sarcomatous, or myxomatous tumors, in which the enclosed glandular elements are a secondary phenomenon.

Such a tumor is usually a true fibroma; but, if the infiltrating connective tissue be rapidly forming and rich in cells that have not had time to throw out fibrillary processes and become connective tissue, the growth would be properly classified as sarcoma. We cannot draw a sharp line between fibroma and sarcoma either clinically or with the microscope; nor can we always distinguish sarcoma from simple granulation-tissue the result of injury or inflammation. It seems clear, therefore, that the chief element of adenoma, adeno-sarcoma, adeno-fibroma, myxoma, and sarcoma is an infiltration of connective tissue more or less rich in cellular elements or mucilaginous material.

To go a step further, we may safely say that there are but two possible sources from which this infiltration of connective tissue may spring; and these are, first, the previously existing connective-tissue cells and, secondly, the leucocytes.

Two kinds of cells are found in connective tissue, the fixed cell and the wandering cell.

That fixed connective-tissue cells proliferate I very much doubt, but there is no reason to doubt the proliferation of the wandering cells, which are really leucocytes. However, be this as it may, we cannot question the fact that white blood-cells do, under a variety of circumstances, pass out of the bloodvessels and change into fixed connective-tissue cells. Nor can we doubt that much, if not all, of the new connective tissue formed at the site of various inflammations is derived from wandering leucocytes. The main function of some of the leucocytes seems to be that of changing into connective tissue for purposes of repair or for the walling up of some foreign body or deleterious substance. Granted then the infiltration of a tissue with leucocytes, we have the ancestor for our tumor. Let the fibrous mesh of the mammary gland become infiltrated with cells, as it invariably will under the influence of prolonged irritation; let these cells change into connective tissue, as they invariably will do under the same influence, and we have a tumor that will be fibrous or sarcomatous according to the slowness or rapidity of the process. We have only to find and *understand* the source of irritation to complete the etiology.

In order to make my propositions intelligible allow me to state some of the physiological processes known to occur in healthy tissues and in inflammations. We know that in the mammary gland we have a collection of gland-tubes surrounded and supported by a rather loose mesh of connective tissue richly supplied with bloodvessels and lymphatics. We know that normally there is a constant outpour-

[1] Read before the Medical Society of the District of Columbia, October 2, 1895.

ing of lymph or plasma from the vessels, and that this plasma flows between the meshes of the connective tissue, bathing and nourishing these cells and also those composing the gland-tubes, and finally finding its way into the lymphatics, to be returned to the bloodvessels. We know that the walls of the capillaries are provided with or can create small openings or stomata which allow white blood-cells to pass out in limited numbers and accompany the stream of plasma, while under ordinary circumstances the red corpuscles are unable to pass through these minute openings.

Let an irritant be applied, and the capillaries will become distended, plasma and cells pass out much more rapidly than in health, and the loose connective tissue becomes packed with cells and plasma. Stop the irritation, and the capillaries return to their normal condition, the infiltrating cells and plasma are carried off by the lymphatics, and the part returns to its normal condition. But let the irritation be continued long enough, and the infiltrating cells begin to change into connective tissue. They will continue to come out of the bloodvessels and form connective tissue as long as the irritation is continued. After a time indeed this newly formed tissue may act as a foreign body and become encapsulated. Whether or not the tumor will continue to grow depends perhaps upon several conditions, such as the continuation of the irritation, the resistance of the tissues, the completeness of the nervous control of the fixed cells of the tissue, and the amount of nutrition supplied. That fibrous and sarcomatous tumors have frequently originated at the seat of an injury cannot be denied, *nor can it be proven that most tumors have not been preceded by some inflammatory infiltration.*

There is much evidence to show that benign as well as malignant tumors usually occur in some tissue that has been the seat of such infiltration. I have myself seen four cases of what appeared to be a simple mammary abscess develop into a tumor. In one case into a carcinoma, in one into a rapidly fatal small round-celled sarcoma, and in two cases into fibromata or so-called adenomata that continued to grow and developed into large tumors. In fact, all inflammations that result in destruction of tissue or suppuration leave behind them a certain amount of fibrous infiltration enclosing gland-tubules that would present exactly the microscopic appearance of adeno-fibroma. I have in my possession a section showing this condition, taken from the breast of a woman who died of chronic parenchymatous nephritis soon after the healing of a mammary abscess. It cannot be distinguished from ordinary adenoma.

Keloid growths in scars are common. The frequency of occurrence of tumors in any organ is in proportion to the amount of exposure of that organ to inflammatory influences. Seventy per cent. of all tumors in women attack the reproductive organs, and it is safe to say that seventy per cent. of all prolonged inflammations are similarly situated. The mammary gland is peculiarly exposed to traumatic injuries, to bacterial invasions, and to prolonged and chronic irritation of a reflex character from the uterus. Its loose anatomical structure seems particularly favorable for tumor development and growth.

I am aware that these views are diametrically opposed to some recent and high authorities. Mr. Roger Williams, F.R.C.S., has recently published a monograph upon diseases of the breast, of which J. William White[1] says: "Mr. Williams, whose previous work in this same direction has been noteworthy, has now given to diseases of the breast a broad and comprehensive consideration which makes his monograph the most valuable contribution of recent years to our knowledge of the subject." Mr. Williams' book is undoubtedly of great interest, for he has carefully collected and arranged a vast array of facts bearing upon his subject. He makes, however, the startling statement that 95.74 per cent. of all breast-tumors are of archiblastic origin, and only 4.26 per cent. of parablastic origin. If we really believed that nearly 96 per cent. of all tumors of the breast were of epithelial origin, there would be no excuse for leaving any tumor in a breast a moment longer than necessary for its removal; but the explanation of this statement by Mr. Williams is that he regards the common adenoma as an archiblastic tumor because he finds in it the epithelial lining of the glandular ducts, which he believes to be originally derived from the ectoderm. This is, in my own opinion, so grave an error as to destroy the foundation of all his subsequent deductions. Again, says J. William White: "He minimizes the influence of trauma and of pre-existing inflammatory lesions, contrary to the widespread belief both in the profession and among the laity, and concludes his careful review of this part of the subject as follows: 'The outcome of all this is that intrinsic causes are much more important factors in the origination of cancer than extrinsic ones, which are by no means its necessary antecedents. In the vast majority of cases the outbreak of this disease seems to be entirely spontaneous; that is to say, it cannot be attributed to the immediate action of any appreciable extrinsic cause whatever. The occasional transformation of innocent into malignant growths must be admitted.'" But he thinks this is very different from admitting that such neoplasms are specially prone to develop into malignant disease.

Here again his reasoning, I think, is faulty. He persists, like many others, in refusing to take into consideration the statement invariably made by

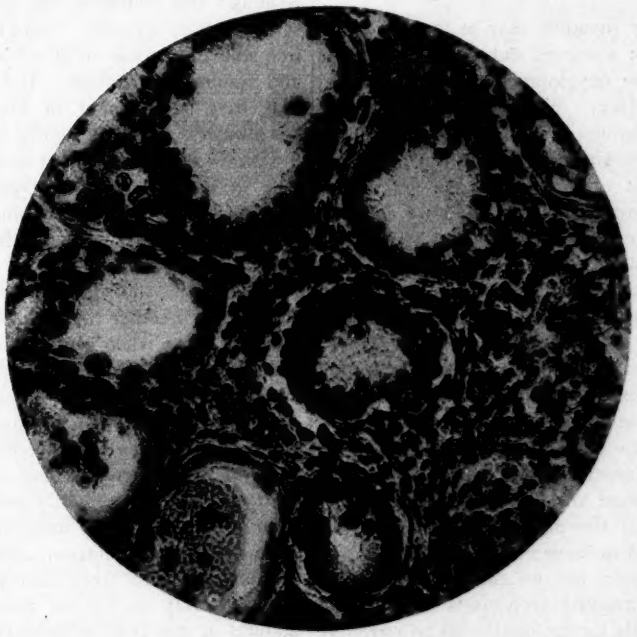
[1] American Journal of Medical Sciences, October, 1894.

cancer-patients that the cancer was preceded by some traumatic or inflammatory condition, while he accepts without question any other statement that the patient may make. I began my medical career with the same prejudice. I did not believe that cancers or benign tumors were usually preceded by inflammatory changes. I was annoyed by the persistence with which patient after patient gave the history of a bruise or an abscess, then a knot or lump; then, perhaps, a period of quiescence, then a rapidly developing tumor.

A case came under my observation of a bruise followed by an abscess. The abscess was evacuated and a brawny infiltration remained. In a year the brawny infiltration had disappeared, but a mass of connective tissue could be felt deep in the gland at the seat of abscess. A year later this tumor began to grow rapidly and became painful. In order to remove it I found it necessary to remove the whole breast, and I was much surprised to find the tumor a typical adeno-fibroma, with a typical nodule of scirrhous carcinoma in its centre. This case I reported in full in the *Virginia Medical Monthly* for December, 1891. There is no anatomical bar to such an occurrence. It is contraindicated by no known physiologic or pathologic law. On the contrary, it is just what we would expect to occur under the circumstances: at least, up to the point of formation of the fibrous tumor. Then why should we throw out the overwhelming mass of testimony to show that tumors, both benign and malignant, are usually preceded by inflammatory conditions?

Let us go a step further and see how a benign tumor may become malignant. It is acknowledged by nearly all authorities that this change does occasionally take place. Mr. Williams admits it, while he deprecates its importance and minimizes its frequency. We can readily understand how a fibrous growth may become sarcomatous when we remember that there is no sharp anatomical distinction between these two classes. An increase of irritation, a more rapid cellular infiltration, is all that is necessary to make the change.

With carcinoma the case is somewhat different. We must introduce a new element—the proliferating epithelial cell. In every fibrous tumor of the breast we have epithelial cells lining the glandular ducts.



Physiology teaches us that these epithelial cells are under the influence of nerves, presumably by contact with a minute axis-cylinder fibril. Golgi's method of staining has shown us that these minute nervous fibrillæ exist in great numbers where they were previously unsuspected, and that they come into close proximity, if not actual contact, with each cell. There is scarcely a doubt that we shall now be able to trace them to the epithelia contained in adenomata; but it is easy to conceive that the contraction of newly formed connective tissue or that inflammatory infiltration may destroy by pressure all such nervous connection with some of the glandular epithelial cells. We would have then a cell resembling an amœba entirely severed from all connection with the central nervous system, free to revert to its ancestral type, free to multiply *ad libitum*, free to wander into new fields and infil-

trate new tissue, provided the ever-active leucocytes allow it to do so. Such a cell may prove to be the long-sought cancer-bacillus or cancer-amœba. As in the case of bacterial invasions, a warfare would immediately begin between the invaders and the leucocytes, and the result would depend upon the relative numbers and activities of the opposing forces. Let the leucocytes succeed in surrounding and closely walling up the invaders, and they may be held prisoners indefinitely or die and degenerate in their prison. In this way some of the cysts and cheesy nodules found in older mammary adenomata may originate. In such cases the tumor would remain temporarily benign, but would increase in size.

In some cases the invaders may be few and scattered, and may be squeezed out of existence by the connective-tissue development without leaving behind a tangible trace. We may thus account for the source of continued irritation and growth in some apparently benign growths. Indeed, the possibilities are almost unlimited. Once get a few epithelial cells separated by inflammatory infiltration, or connective-tissue development, from the general nervous system, and the varying fortunes of war between them and the leucocytes, influenced as they are by the relative activities and numbers of cells on either side, by the vascular supply and consequent reinforcement of leucocytes, by the vigor and resistance of the fixed cells of the tissue, and by many other remote and direct conditions, give us data sufficient to account for all the phenomena observed in tumors of the breast. It would take up too much time and be out of place here to attempt to show all the many ways in which the scale may be turned in favor of one or the other of the opposing armies; but we can readily understand how, if the invading archiblasts increase and travel a little too fast for the leucocytes to surround and imprison them, we will have exactly the conditions necessary for the formation of scirrhus: acini here and there, filled with cells, and a continual escape of a few scattering invaders into surrounding tissue, there to repeat the process or to be taken up by lymphatics and carried to distant parts, to start a new focus of infection. On the other hand, if the leucocytes are of sufficient activity, they will succeed in either destroying the invaders or holding them in check, and the growth will appear benign, or may even remain stationary for long periods; but if such a condition of affairs exists, there will always be danger of an irruption.

The evidence in favor of such a theory is considerable. In the first place, there is in it no contradiction of any known anatomic condition or physiologic law. On the contrary, it is just what we would expect under the circumstances from our knowledge of biologic processes in general. It coincides with and explains all known facts, and makes intelligible many facts that are otherwise mysterious or inexplicable. Each step in the process is known and admitted actually to occur in nature under similar circumstances. Microscopic sections apparently show these processes actually taking place. The accompanying microphotograph of an adeno-sarcoma, kindly given me by Dr. Gray, of the Army Medical Museum, seems to show an eruption of epithelial cells from a broken-down tubule that is surrounded by a mass of fibrous tissue and apparently deprived of nerve-influence.

Patients with malignant tumors almost invariably give a history of previous inflammatory affections, although this evidence has been persistently and systematically ignored. Malignant tumors are more frequent in organs most subject to inflammatory and traumatic irritation. Indeed, it would seem that they never occur in normal healthy tissue, but always in some previously infiltrated tissue.

In view of these facts, it seems more than probable to me that malignant growths usually originate in some previous inflammatory condition or fibrous tumor. However this may be, when we come to deal practically with mammary neoplasms we must admit that in their incipiency it is impossible to say whether they are malignant or benign, and that, even when well developed, apparently benign tumors sometimes suddenly take on the characters of malignancy. We must also agree that it is only in the very early stages of carcinoma that we can expect a large percentage of cures from removal of the growth; but, of course, all inflammations do not necessarily produce tumors of any kind. To produce a malignant tumor we must have prolonged irritation, and finally a separation of some epithelia from central nervous influence, and not only so, but we need perhaps a certain amount of inactivity or debility of leucocytes. This may be hereditary and account for the hereditary tendencies to cancer, or may be acquired in a variety of ways. The majority of surgeons to-day agree with Heidenhain that carcinoma is at first a local disease, and that recurrences are due to incomplete ablation. I wish to emphasize the fact that it is only very early in its development that we can make a complete removal. The very moment that the usual signs of malignancy begin to show the chances for complete removal become greatly lessened. The fact that some cures result from late operations does not in any way invalidate this statement. It is the general belief, borne out by the experience of others and by my own, that operations properly done at a sufficiently early period will almost invariably prove successful. In 1890 and 1891, and the early part of 1892, I operated upon four cases at a very early period, before there was any fixation, enlargement of glands, or other

sign of malignancy. In fact, in each of these cases I supposed the tumors to be benign before beginning the operation; but the lack of encapsulation and some infiltrating streaks of connective tissue led me to remove the entire gland. The axilla was not opened. Microscopic examination of these four tumors showed them all to be carcinomas. One of these patients, above referred to, was nineteen years old at the time of operation; the others were aged respectively twenty-eight, thirty-one, and thirty-eight. All are still living under observation, and after more than three years have had no recurrence. Since 1892 I have operated in a similar manner upon five others at an early stage; all proved to be carcinoma by microscopic examination, and are free as yet from recurrence after a period of from two and a half years to two months. Sufficient time, of course, has not elapsed to say that the latter five cases are cured; but I feel quite sure that there will be no return in any of them, and that a complete removal of the gland while the tumor still has the clinical appearance of a benign growth will give us nearly 100 per cent. of cures. Contrast this with the statement made by the elder Gross, shortly before his death, to the effect that he thought he had never cured a cancer, but operated merely for moral effect. If anything like 100 or even 50 or even 25 per cent. of cures is to be obtained by any operation, that operation must be done very early—so early in fact that we will not be able to say that the growth is malignant until we have made a section of it. The longer we wait the smaller will be the percentage of cures. Are we then justified in removing every tumor of the breast as soon as discovered? I think we are, for the following reasons:

Cancer is increasing more than any other known disease. Williams, in his recent work on *Tumors of the Breast*, estimates the number of cancers in England and Wales in 1840 at 4500, and in 1895 at 40,000. No other disease can show anything like such an increase. I have recently seen statements from reliable sources to show that the increase in America is in about the same ratio. In the case of any given incipient tumor of the breast in a woman between thirty and forty years of age, the chances are that it is malignant. Earlier or later in life the chances become more and more in favor of the tumor being benign; but I hardly think we should dare to await development, even if the chances were ten to one that it would prove benign. After a tumor has attained a considerable growth and remained for some months without perceptible change and without showing evidence of malignancy, the chances that it will ever do so are comparatively small. Every time this subject is mentioned some one will arise in the discussion and say: "Why, I know a woman, Mrs. So and So, who has had a tumor of the breast for thirty years, and another who carried one for twenty-five years, and you need not tell me these tumors should be removed." Now, I grant that such tumors do usually run a benign course to the end; but I think if you will be on the lookout for such cases, as I have been for two or three years, you will soon be surprised to find how many of them suddenly give evidence of malignancy. They have either been malignant from the first, or some battle has been going on in them all these years, such as I have described above. I can give no figures as to the frequency of such a change. It is impossible at present; but my own idea is that at least one out of ten apparently benign tumors will undergo a malignant change sooner or later if not removed. And this change may possibly take place after removal, as instanced by a case related to me by Dr. Gray, of the Army Medical Museum. He examined a tumor that had been removed and found it benign; but a recurrence took place, and the second growth was malignant. If there is any truth in the foregoing observations, the chance that any given tumor of the breast is malignant or will become malignant is anywhere from 10 to 50 per cent. With such a prospect or even with chances of one in a hundred for malignancy, I think we should not hesitate to operate. Even leaving out the question of malignancy altogether, it seems to me there are sufficient reason and justification for removing all tumors of the breast at an early period.

They are always a source of anxiety and annoyance. They are often painful at times, particularly at the menstrual periods, and they usually continue growing for a long time and become more and more troublesome as time passes. There is scarcely any danger in the operation. Almost the only objection is on cosmetic grounds, and it is questionable in my opinion whether a tumor is more a thing of beauty than a scar; but if the operation is done at a sufficiently early period, there need be little disfigurement unless the growth presents some evidence of malignancy. If the tumor is encapsulated, I think it is sufficient to remove it entire in its capsule. And if the tumor is small, there will be very slight disfigurement; but if the tumor is not encapsulated, the whole gland should be carefully removed. I do not believe it is necessary or advisable to open the axilla unless there is at least a suspicion of malignancy.

I have said nothing about microscopic examination before operation, because I believe cutting the tumor before operating for its removal may cause a rapid change or an escape of cells that will infiltrate new tissues and perhaps be the cause of recurrence. And there is no doubt in my mind that all these tumors should be removed without any cutting into the tumor, without rough handling, pulling, or

squeezing. All cases should be examined microscopically after removal and recorded for future statistics. I imagine that many surgeons would be greatly surprised if they could see sections from all the small tumors they have thrown away without examination. There would be a vastly greater per cent. of malignant growths among them than most of us suppose. I would also urge that these microscopic examinations be made with great care by a competent man, and that he be given the whole tumor to examine, for it often happens that tumors present very different appearances in different parts of the growth.

There is little or no difference of opinion as to what should be done for plainly malignant growths. Thorough removal is the only hope, and the present operation of removing the pectoral muscles and axillary fat and glands is perhaps the best that we can do; but there are two very distinctly different ways of performing this operation. I shall briefly describe what I believe to be the important points to be observed. Begin with the axilla, so as not to force any cancerous material or cells from the axilla into the deeper tissues while manipulating the breast. Cut down to the axillary vessels, and tie all branches passing into the tissue to be removed. Remove the axillary contents in one mass by clean cutting with a sharp knife and without picking or pulling. In this way the axilla can be thoroughly cleaned in one-tenth the time and with less danger and hemorrhage, and less danger of squeezing infecting cells into the tissues that are left. Extend the incisions down over the tumor so as to enclose and remove all diseased skin and a considerable margin, at least an inch, of healthy skin. Turn back the healthy skin on each side so as to expose all tissue to be removed, and then remove it in one piece by clean cutting.

I would like also to say a word against any operation after a well-marked cancerous cachexia has appeared or secondary growths have begun in internal organs, unless it be clearly understood by all concerned that it is only for palliative purposes. The undertaking of hopeless operations, as a rule, only brings surgery into discredit, and deters others from undergoing proper operations at the proper time. Patients with tumors have inquiring dispositions and communicative friends. They hear of every failure in the city, and are often in this way persuaded to put off an operation until forced to it by suffering, when it is too late.

THE school census which was ordered to be taken by the police department in New York City has been completed in all but eighteen districts. The reports so far received show that 399,314 children have been enumerated.

CURETTAGE IN THE TREATMENT OF TRACHOMA.

BY A. N. STROUSE, M.D.,

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IN view of the frequency and obstinacy of this affection, a large number of methods of treatment have been suggested from time to time, many of which, after a brief period of trial, have been relegated to obscurity. It is my intention here to discuss briefly those procedures which are most extensively employed at the present time, and then to describe a method which in my hands has proved superior to all others, and has practically taken their place in my practice. My remarks apply chiefly to the severer forms of trachoma, although it must be remembered that even in the milder varieties recourse must now and then be had to radical measures.

Probably the method which still enjoys the widest popularity among ophthalmologists is the application of such caustics as the solid stick of sulphate of copper or pure alum. This serves a useful purpose in milder or more recent cases, but after it has been given a fair trial it is often found that, after a certain amount of apparent improvement has been effected, the disease remains stationary, and in that event more radical measures are demanded. At any rate, even in favorable cases, the treatment by caustics is usually protracted, and requires a considerable degree of perseverance on the part of the physician and his patient, while it is often quite painful, especially at the commencement.

Among the operative procedures the one most in vogue is expression. The cruder way of practising this procedure consists in squeezing out the contents of the follicles by means of the finger-nail, or the copper stick when applying it. This, however, is less thorough and effective than the use of one of the various forms of forceps devised for this purpose, among which the roller-forceps of Prof. Knapp is the most applicable. Expression has certain disadvantages which, in my opinion, greatly detract from its value, chief among which are the following: The forcible expulsion of the trachoma-follicles produces extensive laceration of the delicate conjunctival tissues. The deeper-seated follicles are evacuated with difficulty. The pressure required to eradicate the disease thoroughly, especially if, as frequently happens, the roller of the instrument does not rotate, but glides over the surface, is so considerable that the underlying tissues are subjected to severe contusion, which retards healing of the affected part. In consequence of this the reproduction of normal epithelium, after expression, is impaired, and an excessive amount of cicatricial tissue produced; moreover, certain parts of the con-

junctival sac cannot readily be reached with the roller-forceps. Aside from these objectionable features, the pain attending this method is so marked as to necessitate the employment of general anæsthesia.

Among operative procedures in the treatment of trachoma, grattage, next to expression, is probably most often resorted to at the present day. As commonly practised, this operation consists essentially of scarification of the conjunctiva with an instrument provided with a number of sharp blades, followed by rubbing with a stiff brush moistened with a strong solution of bichloride of mercury (usually of the strength of 1 : 500). The brushings are repeated once daily for a week, at the end of which time a cure is sometimes effected. An extensive trial of this method has led the majority of ophthalmic surgeons to discard its use, as it has been demonstrated that its disadvantages more than counterbalance whatever benefits may be derived from it. Extensive cicatrization is apt to result in consequence of the numerous and necessarily deep incisions, producing contraction of the conjunctiva of the lid, and entropion. Very little of the normal conjunctival membrane is visible after the operation, its place being taken by a cicatricial mass. Equally common sequelæ are cicatricial bands between opposing surfaces of the ocular and palpebral conjunctiva. This method, like expression, requires general anæsthesia, as it is attended with so much pain that the local application of cocaine is unavailable.

Excision of the retrotarsal fold may be dismissed with a few words, as it is an incomplete and unsatisfactory method, and is but rarely employed. The same objections apply to puncture of the trachoma-follicles with the galvanocautery-point, as well as to abscission and evacuation of the follicles with the needle, and similar procedures.

Recognizing the uncertain results derived from the methods above described, I was led about five years ago to devise a plan of procedure which in my hands has proved its superiority over all others with which I am acquainted.

This method consists essentially in curettage of the trachomatous tissue with a sharp curette shaped like a cataract-spoon. The cutting-edge of the instrument measures about 1.5 mm. in width, and is ground sharp in its entire circumference, while the back of the curette is flat and smooth.[1] The shank should be elastic and yet sufficiently firm to withstand ordinary pressure, and is attached to a metal handle, so that the instrument can be properly sterilized. (See illustration.)

[1] It was suggested to me that the spoon be fenestrated, but this is not advisable, for if the back of the instrument should come in contact with the cornea it would undoubtedly do more or less damage. The curette is made for me by F. G. Schmidt, N. Y.

After thoroughly cocainizing the conjunctiva the lower lid is everted and rapidly scraped over its entire extent. Then the upper lid is everted and held between the thumb and finger of one hand, while the curette is passed up into the fornix, and this part of the conjunctival sac scraped, care being taken to penetrate all the folds. The everted portion of the lid is treated last. During the entire procedure, which occupies but a few minutes, an assistant mops the lids with absorbent cotton dipped in an antiseptic solution (a saturated solution of boric acid or a bichloride solution 1 : 10,000).

When the hemorrhage, which is only slight, has ceased, we see a surface which is smooth except for a number of depressions or small cavities. These are deep or shallow, according to the seat of the trachoma-bodies contained therein. The surfaces are now thoroughly washed and touched with a 2 per cent. solution of nitrate of silver. This is really the only part of the operation that elicits any pain, and by the instillation of a few additional drops of cocaine even this may be entirely avoided.

The after-treatment consists in the application of iced pads for one-half to one hour, and by the end of this time any reaction will be found to have subsided. That the reaction, however, is inconsiderable is shown by the fact that ignorant dispensary patients, who frequently neglect to obey instructions, rarely complain of any inconvenience following the operation. The patients are ordered to return every other day, when they are again treated with the silver solution. The latter has given me better results than the 1 : 500 bichloride solution, which I first employed when it was recommended by the advocates of grattage. After the eighth to tenth day, when the epithelium is completely regenerated, and the cavities left by the trachoma-follicles have completely granulated and are flush with the surface of the conjunctiva, I sometimes discontinue the silver application and resort to the copper stick. This treatment is continued for the following week or two, at which time the patients are usually completely cured. The palpebral conjunctiva is now smooth, the thickening and induration of the lids have markedly subsided, and pannus, if it has existed, shows a tendency to subside without further treatment, or even may have disappeared completely.

If at the end of four weeks the cure is not complete, the curetting should be repeated. The second operation is even of a more simple character than the first, as it is not necessary to curette so deeply and extensively, and naturally the reaction is even slighter than before.

This, in brief, is the plan of treatment which, in my opinion, should be given a high place in the therapeutics of trachoma. I will not occupy your time by reports of cases nor weary you with an extensive bibliography of the subject. As far as I am aware, Sattler was the first to call attention to the value of curettage in the treatment of trachoma; but for some time previous to the publication of his article I had been employing the operation devised by me and demonstrating its technique to my class of students at the New York Polyclinic. The method differs essentially from that of Sattler, who resorts to puncture of the follicles with a cataract-needle before the use of the curette. Davier, who has employed Sattler's method, lays less stress on the scraping than on the brushing and washing of the cul-de-sac with sublimate solution. Secondi recommends curettage followed by expression of the follicles with a special forceps. Peters advocates scraping the mucous membrane with a dull lancet. In fact, as far as I can learn, all those who have employed curettage have combined this procedure with scarifications, brushing, needling, expression, and other auxiliary measures, and no one has made use of curettage, pure and simple, as recommended in this article. It might be supposed that the removal of the conjunctival epithelium and deeper tissues with the sharp curette would be followed by extensive formation of cicatricial tissue; as a matter of practical experience this is not the case, the epithelium is almost completely regenerated, and the subconjunctival tissues assume a soft and pliable character except where scars had resulted from deeper-seated trachoma-follicles.

Indeed, this seems perfectly explicable when it is remembered that the curettage of granulation-tissue, and necessarily of more or less of the deeper structures, is constantly resorted to in other mucous surfaces of the body, with the result of a perfect restoration of the function of the affected membrane.

In conclusion, I would emphasize the following advantages which curettage possesses over other methods advocated for the treatment of trachoma:

1. Its uncomplicated technique and the rapidity with which it can be performed.

2. Its comparative freedom from pain, enabling us to dispense with general anæsthesia.

3. The minimum injury inflicted upon the conjunctival and subjacent tissues.

4. The absence of inflammatory reaction after operation, permitting the patient to follow his usual occupation without discomfort. This is an important point in its favor in comparison to other operative procedures which confine the patient to his room for several days.

5. The simplicity of after-treatment, which is of importance, in view of the fact that the majority of trachoma cases occur in the lower walks of life.

6. The radical character of the operation, recurrences being rarely observed.

TETANY, WITH ILLUSTRATIVE CASE.

BY GEORGE W. MILES, A.M., M.D.,
OF ONEIDA, N. Y.

VERY little mention of the disease known as "Tetany" is found either in text-books of general medicine or in special works on nervous diseases. An interesting and exhaustive study of the subject has been published by Professor J. P. Crozer Griffith, of Philadelphia.[1] Dr. Griffith expresses surprise at the scarcity of records of tetany to be found in American medical literature, and speaks of the disease as one of "rare occurrence in this country."

A short time previous to the publication of Dr. Griffith's paper (December 11, 1894) I reported to the Madison County (N. Y.) Medical Society a case of tetany occurring in my practice. It is possible that, in view of the conceded infrequency of the disease, a brief consideration of the subject of tetany, in connection with the history of my own case, may be of interest.

In a work published quite recently is found the following definition of "Tetany," "Tetanilla," or "Little Teta-nus": "A functional disease of the nervo-muscular apparatus, characterized by the occurrence of paroxysmal tonic spasms that involve certain groups of muscles, and that in severe cases may extend to nearly all the voluntary muscles of the limbs and body." This definition gives little idea of the terrible intensity of suffering that marks the clinical history of tetany. The nerves that are concerned in the production of the contractions exhibit an immense increase of electrical and mechanical excitability. The functional character of the disease has led many observers to doubt the propriety of dividing it from other functional spasmodic disorders, or as to regarding the disease as a separate entity. The disease is observed more frequently by physicians in general practice than by those whose experience is limited to office and consultation practice. The weight of opinion seems to be that tetany occurs most frequently among children. The influence of sex is not very decided. Persons who have been exposed to cold or wet seem to be particularly liable to attacks of tetany. Stubborn constipation or any intestinal irritation is liable to provoke an attack. Dentition is said to be, likewise, a cause. Attacks occur also in connection with other diseases, particularly typhoid fever. Constitutional causes favor its development.

[1] American Journal of the Medical Sciences, February, 1895.

When a predisposition to tetany exists almost any irritation of the cutaneous or mucous surfaces may excite an attack of the disease.

The occurrence of an attack is usually preceded by certain premonitory symptoms, as dizziness, determination of blood to the head, humming noises in the ears, and disturbance of vision. When the attack is matured, the force of the paroxysms is expended upon certain groups of muscles, the flexors being affected more frequently than the extensors. Neuralgic pains and soreness are complained of, headache, dizziness, and other cerebral symptoms of sensory disorder. The increased and inordinate excitability of the motor nerves is further indicated by their behavior under the influence of mechanical stimulation, a slight tap upon the nerve-trunk being sufficient to arouse a paroxysm. The duration of a paroxysm may vary from a few minutes to many hours, or even two or three days. The disease might be confounded with tetanus, but is lacking in the rapidly increasing severity of the phenomena of that terrible disease. Although a few examinations post mortem have been made in tetany there is little known of the pathology of the disease. One observer claims to have found a periarteritis and a periphlebitis of the bloodvessels of the white commissure and of the anterior horns of the cervical portions of the spinal cord. Others have found nothing of the kind, but, in the place of pathological facts, have built up an ingenious theory that the attacks of tetany are due to an irritable condition of the gray matter of the medulla and spinal cord, and that this irritable condition is due to sympathetic disturbances, causing irregularities in the vascular innervation of the bloodvessels of the spinal cord. This, however, does not appear to be a very lucid explanation of the attacks. The disease is seldom fatal, but sometimes persists for a considerable period of time. In these lingering cases a certain degree of muscular contracture and weakness is often evident after the cessation of spasmodic attacks. The disease has a distinct symptomatology, and this will be best illustrated by the narration of the case before mentioned.

In October, 1894, Florence S., a girl, aged seven years, was brought to me with the request that she be vaccinated. I performed the minor operation in the ordinary way, and in the usual site upon the left arm. About ten days later severe inflammatory symptoms supervened upon the full development of the pock, caused by undue traumatism, the child having injured the arm and destroyed the original vesicle by scratching or rubbing it during sleep. The inflammation was readily relieved by an anodyne and astringent lotion. A considerable wound resulted, however, and there was sloughing of the skin over a space as large as a silver half-dollar. After subsidence of the inflammatory action the healing process was rapid and the arm improved daily. About six weeks after the vaccination, on the morning of November 14th, I was asked to see the child, the parents being much alarmed about her. At this time the sloughing surface upon the arm was rather an insignificant one. The general symptoms, however, were severe and so closely simulated tetanus as to be startling, to say the least. There were tonic spasms of the arms and legs, succeeded by the same condition in the muscles of the neck and back, and likewise in the abdominal muscles. In the latter, particularly, the rigidity was so great as to elicit cries of pain. The muscles of the neck remained for the most part in a state of tonic contraction, so that any movement of the head was rendered quite impossible. The rigidity of any of the muscles was so great that passive movements were impossible. The muscular groups of the forearm, the upper arm, and the legs were involved. The facial muscles were affected, and the grimaces and contortions resulting served more thoroughly to alarm the friends. The muscular spasms were bilateral. The tips of the fingers and thumbs were drawn together into a conical shape. Some of the toes were flexed and bent laterally under the other toes. The upper arms were drawn against the sides of the thorax and the forearm strongly flexed. There did not seem to be any involvement of the muscles of the diaphragm or bladder, as reported in some cases. These paroxysms lasted only a few moments at a time, but continued intermittently for three or four days, and in the beginning at least the phenomena of tetanus were closely counterfeited. Opisthotonos occurred frequently during the first day. Several authorities, while speaking of the startling resemblance which tetany bears to genuine tetanus, mention as distinguishing the diagnosis that trismus occurs in the outset in tetanus, and is not apt to be or is not often found in tetany. In this case this diagnostic aid was not given me, as the initial spasm of the masseters was a prominent feature of the case. The jaws were so firmly set together that the handle of a spoon could not be inserted flatwise. Any attempt to stir the child in bed was immediately followed by a tense and extremely rigid condition of the entire muscular system. The increased mechanical excitability, which is a well-marked symptom of tetany, was very prominent in this case. The slightest sound, even speaking the patient's name or extending the hand toward her or touching the surface was sufficient to produce a paroxysm. These spasms continued, as I have said, for three or four days at irregular intervals. The patient slept very little for all of that time during the day or night, a light sleep of fifteen or twenty minutes being followed by her awakening with screams and new paroxysms and pain in the contracted muscles. The pain complained of was sometimes in the jaws, sometimes in the left arm, sometimes in the abdominal muscles. Following each spasm the entire surface of the body was bathed in perspiration. While in the beginning the spasms occurred several times in the space of an hour, the intervals of relaxation became gradually lengthened, and much

relief was obtained, though some stiffness of the muscles remained after three or four weeks. After the second day the relaxation of the jaws for a portion of the time was sufficient so that a tube could be inserted between the teeth, and in this manner it was necessary to introduce nourishment. This method of feeding was followed for about two weeks, as for that entire period the masseter muscles were never entirely relaxed except occasionally during sleep. The bowels were greatly constipated. The pulse during the height of the attack remained at about 140 at night and 120 in the morning. There was very little rise in temperature, at least not to exceed a degree. I learned that for a couple of weeks preceding the complete attack nervous symptoms had been noticed by the parents, slight rigidity of the muscles, disturbances of vision, etc. The result of this case was complete recovery. Convalescence was considerably prolonged.

While the condition in this case at first sight was, as I have said, quite startling, and the simulation of true tetanus was great, still the complete recovery (a circumstance not within my experience in tetanus), a consideration of the latent period which had existed, the prominence of the mechanical excitability, the complete relaxation of all the muscles during the intervals of the attack, all of this leads me to the belief that the disease was not the graver one. The idea of an hysterical element in the case was not lost sight of, but all symptoms and the entire history seem to admit of classifying this case with those of tetany already reported.

How much, if anything, the vaccination or the wound following had to do with the symptoms which existed I do not know. I imagine that these matters were neither directly nor entirely causative. In the minds of the frightened parents, however, the vaccination was the only thing prominent, and the night-calls, the extra work, and the unnecessary trouble that was made me for three or four days were such as almost to make me wish that the immortal Jenner had never been born.

I know that the child is of a general neurotic temperament; she was of a constipated habit; she had been exposed to the cold and wet; she had at the time an extremely sore mouth, the result of digestive disturbances. Each of these things and many others are believed to have been causes of special cases of tetany. I have no doubt that some or all of them entered into the etiology of this case, and it is possible that the irritation of the cutaneous surface by vaccination may have likewise been a factor.

THE CHAUTAUQUA COUNTY MEDICAL SOCIETY will hold its semi-annual meeting at the Sherman House, Jamestown, N. Y., on January 14, 1896. An attractive programme has been arranged, and a cordial invitation of attendance is extended to the profession of Chautauqua and adjacent counties.

IMPERATIVE CONCEPTIONS AS A SYMPTOM OF NEURASTHENIA.[1]

BY THEODORE DILLER, M.D.,

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UNDER the term imperative conceptions have been described a great variety of morbid impulses and fears which thrust themselves into consciousness. They may arise in a great variety of mental states or be present as an isolated symptom. They are always to be regarded as a symptom, never as a disease. The term imperative conception is somewhat misleading in that the command it implies is by no means always obeyed. Morbid impulses may frequently and for many years arise in an individual, and yet always be successfully resisted.

Probably in all of us impulses, fears, or doubts arise suddenly in consciousness as isolated thoughts or emotions, and which may be apparently totally disconnected with the mental state immediately preceding their appearance. For instance, many of us, I presume, have been seized with the desire to count the windows or doors in passing along a street, or in walking to avoid carefully the cracks in a pavement or to touch fence-posts. Looking from a great height the idea occurs to most persons to precipitate themselves below. The sight of a fragile piece of china or glassware suggests the idea that it could be readily crushed. A helpless child or a feeble invalid suggests how easily each could be killed. Certain words or phrases, lines of poetry or bars of music, may thrust themselves into consciousness at odd times.

These simpler forms of imperative conceptions cannot, of course, be considered abnormal in view of the fact that they probably occur in some shape to all persons. In normal individuals they never result in action contrary to volition. In their exaggerated form, whether seen alone or in conjunction with some neurosis or psychosis, they constitute a serious symptom, and may be the dominant feature of a grave form of insanity. Between the extremes there are all gradations; and to say when an imperative conception ceases to be physiological or within the bounds of health would be as difficult as to say where sanity ends and insanity begins.

Many morbid impulses and fears have received special names. The impulse to steal has been called kleptomania; to set fire to property, pyromania; the fear of open places, agoraphobia; the fear of narrow places, claustrophobia; the fear of dirt, mysophobia; the fear of crowds, anthropophobia; fear of fears, phobophobia.

The French, especially Morel, have described

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[1] Paper read before the Pittsburg Academy of Medicine, December 23, 1895.

and isolated two forms of obsessions, which have been named *délire du toucher* and *folie du doute*. Fear of contamination and doubts are, of course, present within the limits of health. Many individuals are hypercritical as to cleanliness, or unduly fear disease, or contagion. Doubts arise in all of us. The uncertainty as to whether a letter posted was sealed or had a stamp affixed to it; whether the gas has been turned out, or the door locked, or the heat regulated, has haunted most of us. I know a bank officer who, in receiving money, often counts it over two or three times oftener than would appear to be demanded by a reasonable caution. These doubts may assume such exaggerated forms as to constitute a true insanity, the *folie du doute* of the French. The difference between the minor forms of doubt and the grave forms going to constitute *folie du doute* is, as has been emphasized by Hack Tuke and Hughlings Jackson,[1] one of degree only. I recall a patient who was constantly pestered with doubts of all descriptions. If she was eating, she felt she ought not to be doing so; if sitting, she ought to be standing or walking; if knitting, idle; if in bed, out of it, etc., *ad infinitum*. She could never be addressed without expressing doubts, which were to her a real source of distress. She was, in short, a case of *folie du doute*.

There can now be little doubt that certain crimes are due to sudden impulses which arise in the minds of persons who are not ordinarily regarded as insane, and which the subjects are wholly unable to resist.

Impulses to suicide, or to make assaults, or do deeds of violence, or commit crimes, arise in many persons, and yet do not result in action—are not obeyed because they are put in subjection, so to speak, by the inhibitory forces of the mind. When an impulse to commit crime arises and the inhibition to check it is insufficient, the crime is committed. This is the philosophy of the suicidal and homicidal impulse. "Pinel and Esquirol at first doubted the existence of pure insane impulse apart from intellectual flaw or delusion, and many authorities of repute have since their day considered the doctrine a dangerous as well as a fallacious one; yet eventually Pinel and Esquirol asserted the existence of this terrible malady and painted its distinctive features in no uncertain colors." Bevan Lewis, from whom I quote these words,[2] and Maudsley, are both firm believers in irresponsible, impulsive crime.

The simpler forms of impulses, doubts, and fears cannot, as I have said, be regarded as abnormal. In certain individuals, however, they may be so strong or persistent as to be distinctly morbid. For instance, the impulse to touch fence-posts might be obeyed, without exciting comment, by a person passing along a quiet country road and successfully resisted without great effort, when under other circumstances these actions would excite astonishment or subject him to ridicule. On the other hand, if he acted on the impulse, being unable to resist it, while walking with friends in city streets, the impulse would be distinctly abnormal. It might be present in the absence of any other abnormal manifestation of the mind. We must admit with Hack Tuke and Mercier,[1] I believe, as in the example given, that there are diseases of the mind other than insanity; in other words, to say that an individual has some abnormality of his mind is not equivalent to saying that he is insane.

From the fact that these morbid impulses, fears, and doubts are so frequently seen in those undoubtedly insane, and especially in the degenerative types of insanity, such as paranoia,[2] it seems likely, as suggested by Savage,[3] that most frequently in those cases where imperative conceptions appear as an isolated symptom they are the outgrowth of a neuropathic soil; they are marks of degeneracy. They may be in abeyance for years and brought to the surface by shock or disease, lowering vital tone, probably by lessening the inhibitory powers, and in other ways interfering with the association of centres in what Hughlings Jackson calls the upper range. "The man who to-day is conscious of and smiles at an imperative idea gravely believes it to-morrow and labors under a systematized delusion."[4]

With this brief survey of the subject of imperative conceptions in general, I propose to ask your attention to them as a symptom of neurasthenia.

Certain insanities, such as melancholia, mania, paranoia, and paralytic dementia, may develop upon a neurasthenic basis, as has been so well shown by Kirchhoff.[5] Neurasthenia may have been an early stage of insanity, or the mental symptoms may have been developed *pari passu* with the neurasthenic ones; but in either case it is of prime importance to recognize the neurasthenic condition. From the exhaustion, starvation, and poisoning of nerve-centres, which I take to be the basis of neurasthenia, arise many mental symptoms. These have been ably discussed by Cowles.[6] In individuals in whom there is a slight or latent tendency to imperative conceptions it is reasonable to suppose that they might become prominent upon the super-

[1] "Summer and Autumn," Brain, 1895.
[2] Text-book of Mental Diseases, p. 178.

[1] "Summer and Autumn," Brain, 1895, p. 328.
[2] See paper by writer on "Imperative Conceptions in Paranoia," Alienist and Neurologist, April, 1890.
[3] Brain, op. cit. [4] Hack Tuke: Brain, 1894.
[5] Handbook of Insanity, pp. 327 *et seq.*
[6] Shattuck Lectures, 1892.

vention of the underlying conditions which produce neurasthenia. Indeed, in certain individuals where the conditions favor it, a morbid impulse or fear may appear suddenly and be the dominant feature in neurasthenia, as, for example, in this case:

A hard-working, robust-looking, professional man, aged twenty-nine years, was sent to me by Dr. W. F. Robeson last spring. Six weeks before, while sitting in the first balcony at the theatre, he experienced suddenly a strong impulse to precipitate himself below. In great fear and agony he left the theatre lest he should act upon the impulse. The next day he felt strongly impelled to break all the china upon the table. After this he was seized with many imperative conceptions, and his life was one of great distress to him, as he feared he was going insane. Examination revealed a long train of neurasthenic symptoms: headache, morning-tire, loss of endurance, irritability, insomnia, etc. He had worked very hard, frequently over-taxing himself, mentally and physically, since boyhood, and while he suffered from some of these neurasthenic symptoms prior to the appearance of the sudden impulse and fear which came to him in the theatre, yet they were not marked, and he had almost wholly ignored them, and had in nowise drawn less on his nervous force in the prosecution of his work; but with the advent of these imperative conceptions his other neurasthenic symptoms became marked, and it was not difficult to discover them when I first saw him, and hence to recognize the morbid impulses and fears as belonging to them.

The case is an illustration of how the onset of neurasthenia may be apparently sudden. In some cases, where the output of nervous energy is greater than the ordinary process of recuperation, there is apparently some compensatory action for a time, just as we see in valvular heart-disease; but a time comes when compensation cannot keep pace with the extra demands, and the break may be, as in valvular heart-disease, sudden and alarming.

Firm assurances as to the absence of organic diseases and the harmlessness of these imperative conceptions, if the will-power were brought to bear, coupled with a semi-rest treatment, hydrotherapy, faradism, tonics, and occasional hypnotics, brought about in the course of six months a restoration to health. Several relapses, however, occurred, and for a time the patient was frequently seized with imperative conceptions of one sort or other; but with the assurances he had received they caused him much less fear. The most persistent of these impulses was to cast himself from a great height. For a time he feared to cross a river bridge lest he should give way to the impulse to jump over, or in crossing he would, at times, avoid the foot-path and walk in the wagon-track.

An instance showing the appearance of morbid fears in a well-established case of neurasthenia is seen in the following case:

M. C., a well-built, tall man, aged thirty-six years, an engineer, of good habits, was referred to me by Dr. J. D. Shull, of Derry, in June, 1892. Mr. C. had in the previous February been prostrated by a severe attack of influenza, following which he had suffered up to the time I saw him from marked neurasthenic symptoms, such as mental depression, insomnia, dull occipital headache, general muscular weakness, vertigo, flushings, tingling, muscular twitching, and constipation. After these symptoms had become established he began to suffer shortly before I saw him with morbid fears. Although long accustomed to his work he began to dread a wreck of his train. This feeling, he explained to me was, he knew very well, altogether groundless. Yet this fear came to him frequently and suddenly, causing him the most acute distress. It often caused him to turn pale and perspire, and on several occasions he called on the fireman to relieve him temporarily, feeling unfit to be at his post. He debated with himself whether it was not his duty to resign his position, and asked my counsel in the matter.

A plan of treatment similar to that pursued in the first case was instituted, and after several months he reported himself as restored to health.

The development of these morbid fears in a man suffering from a severe train of neurasthenic symptoms and their disappearance together with his other symptoms, leave, I think, little doubt that they resulted from the underlying condition of his nervous centres which had produced the other neurasthenic symptoms and of which they were only a part.

In all cases presenting the symptom of imperative conceptions it is highly important to make a careful search for neurasthenia and to determine, if possible, whether they be not an expression of this condition.

The prognosis of imperative conceptions is best when they result from the neurasthenic state. Speaking of them in a general way Savage[1] expresses the belief that they are incurable if they have existed more than a year, and he allowed only slight hope when they are acute or associated with any special cause or period of life. The experience taught by the two cases cited, however, would strongly indicate that the prognosis is good when they are associated with such a "special cause" as the neurasthenic condition. Probably the prognosis is as gloomy as painted by Savage when the isolated symptom is observed in a neuropathic subject.

Scant reference to the relationship between imperative conceptions and the neurasthenic states is made in works on medicine or neurology. In some of the more recent text-books on nervous diseases, however, as, for instance, in that edited by Dr.

[1] Op. cit.

Dercum,[1] in the excellent chapter on neurasthenia written by him, the subject receives a mention somewhat commensurate with its importance. No treatment of the subject of neurasthenia can be considered complete which omits mention of imperative conceptions as a symptom.

CLINICAL LECTURE.

BLEPHAROPLASTY, STRICTURE OF THE ŒSOPHAGUS, EPITHELIOMA OF LIP, SYNDACTYLUS, SUBDURAL CLOT.

Clinical Lecture delivered at the Buffalo General Hospital.

BY ROSWELL PARK, A.M., M.D.

CASE I.—About ten days ago I performed a plastic operation on this girl's face in order to make a new upper and lower eyelid. Whereas formerly she even slept with the eye open, she can now close the lids. The upper lid was taken from the temporal region, the lower from a V-shaped incision in the cheek. The upper wound was closed by collateral incisions and sliding of tissues, while the lower gap was closed as a linear wound. The scars are at present very noticeable, but they will fade in time.

CASE II.—This patient, an old man, has stricture of the œsophagus, and he is slowly starving to death; have proposed performing gastrostomy, but he positively declines operation. Seeing the end of life approaching he has yielded so far as to permit me to try electrolysis within the œsophagus. This is a procedure in which I have little confidence, but I shall put it in practice in order to do all possible for the patient's relief and with the hope that if this fails he will consent to surgical measures. The flexible œsophageal electrode is connected with the negative pole of the battery, and a current of twenty milliampères is passed for five minutes. We will repeat this every day.

CASE III.—The first operative case is that of a man of fifty-five years, who comes in with an ulcer on the lower lip, not quite in the middle line. It has an indurated base, which flares out so as to make the lip thicker than it should be. The area of infiltration shades gradually into normal tissue. There is no difficulty in making a diagnosis of epithelioma, from the age of the patient, the location of the sore, the refusal to heal itself, and the obvious presence of constant irritation of a pipe. This form of cancer has been called pipe-smokers' cancer. The teeth are badly decayed, foul, and covered with a carbonaceous deposit. There is a notch on the side of the cancer showing where the pipe-stem has habitually rested. The patient has unwittingly favored the growth of the cancer by a variety of applications which he has made. He has also relied on clover tea, and has only sought professional advice within the last few days, when the outlook, though not hopeless, is unfavorable. Epithelioma in this location is almost always seen in men of middle or advanced age; yet not long ago I had to operate on a young woman of twenty-eight who had as typical an epithelioma of the lip as this.

So far as I can feel, there is no lymphatic involvement; perhaps after the patient is anæsthetized I may be able to find enlarged lymph-nodes, and then it will be necessary to remove them. I have often told you that in operating for cancer you must remove all tissue that is invaded without false mercy, stopping only at organs essential to life. The operation consists in the exsection of a V-shaped piece of the lower lip, and, as the closing of this wound reduces the lower lip so that there is a relative redundancy of upper lip, I shall extend the mouth laterally and close this incision by a sliding of tissues, so as to equalize the two lips. This makes the operation longer and bloodier, but the cosmetic effect is better.

It has been customary to dress such wounds with collodion, since the ordinary antiseptic dressing is out of the question; but I have noticed that a little saliva usually works its way under the crust, or else the collodion is raised by an effusion of serum, bacteria enter, and suppuration ensues. Therefore for the last few years I have adopted the policy of allowing the line of sutures to be covered with a scab of blood, perhaps using a little collodion after a day or two, but not at first.

CASE IV.—This case is one of inguinal hernia, of short duration, in a man of thirty-two years. The tumor is only about as large as a hen's egg when the hernia is down. The intestine is now in the abdominal cavity. Having had the site of operation shaved, scrubbed, and disinfected, and surrounding parts shut off by damp bichloride towels, I shall proceed to cut down over the external inguinal ring. There is undoubtedly a serous sac, and the search for this is not quite so easy as it would be with the hernia unreduced. I shall look for it alongside the spermatic cord, which is easily felt. Having found and isolated the sac, I shall now carry out Kocher's idea, make an opening at the upper end of the inguinal canal, draw the sac up into the opening, and twist it. If this does not make a radical cure of the condition, I do not know what will. The outer wound is closed with a continuous subcutaneous catgut suture. Although it is not so important in this location, the subcutaneous suture has the advantage over the ordinary puncturing suture of leaving no cross-marks, so that after healing only a linear scar is visible.

CASE V.—This is morphologically an interesting case, that of a little child, with the middle and ring fingers of the right hand united, and with the middle, ring, and little fingers of the left hand webbed together, with a supernumerary finger between the last two. This condition is known to the laity as web-fingers, technically as syndactylus. Sometimes one sees a complete webbing of all the fingers, when the hand looks as if it were covered with a skin mitten. The condition is an evolutionary relic, a reversion to the condition of united phalanges as seen in many of the lower animals. The condition normally disappears early in the life of the human fœtus. There is nothing difficult about the diagnosis, and the general indication for treatment is plain, for parents do not wish this interesting condition to remain. The separation of the fingers is not, however, so easy as the separation of two pieces of candy that have become stuck together, and it is not sufficient simply to make longitudinal incisions without preventing the raw surfaces from again cohering. Whenever possible we make an oblique compound dissection between the bones, so that there remains on each finger a thin flap which can be wrapped around and sutured to the

[1] Nervous Diseases, by American Authors, p. 65.

skin on the opposite side. Sometimes there is not enough skin to permit this, and then we must simply spread the bones apart and pack in enough antiseptic material to prevent adhesion, and allow the surface to heal by granulation and subsequent cicatrization. A condition resembling syndactylus may be seen from burns or other traumatism and ulceration. When the syndactylus is congenital, it is an advantage to operate as early as possible, for parts thus bound together do not grow so rapidly as those which are free to move.

Supernumerary fingers are not uncommonly seen on the outside of the hand. Sometimes there will be two thumbs or a bifid terminal phalanx of the thumb. Similarly there may be two quite perfect little fingers or the sixth finger may hang like a flail on the little finger. This is a relic of the time when some animals had six digits. No congenital defect or anomaly is ever found which has not its analogue or explanation either in fœtal life or in some of the lower forms of the animal kingdom.

On the right hand I am having some difficulty in coaptating the skin about the little finger. On the left hand the removal of the supernumerary digit will allow plenty of tissue to cover the little finger. It will be interesting to note whether Nature, in supplying an extra finger, has provided it with flexor and extensor tendons. Such proves to be the case. The extra finger is smaller than the others and its bones are more slender. There are only five metacarpal bones, the extra finger sharing the articulation of the little finger. To-day I shall not try to separate the ring and middle fingers, but will wait till the wounds on the adjacent sides of the ring and the little finger have healed. The skin-flaps are sutured, the parts are anointed with antiseptic vaseline which has also been sterilized by heat, iodoform is dusted on, and the fingers are separated with iodoform gauze.

CASE VI.—This patient is a young man who fell on the sidewalk night before last, striking the back of the head. He was quite rational until last night, when he began to talk strangely and to make queer movements of the arms and thorax, and then he had a shivering of the entire body. Before the clinic I could get no answer to my questions, and I concluded that he was aphasic. Since then he has spoken brokenly and without finishing his sentences. His right arm seemed to be in a cataleptic state, staying wherever I put it. While waiting in the anæsthetic room he has had two convulsions, and on account of the irritative character of the symptoms I believe that the lesion is cortical and superficial, and having come on after an interval it is probably of the nature of a hemorrhage.

On inspecting the head since it has been shaved, I note a recent bruise in the middle line, a little above the occipital protuberance. A blood-clot here would not account for his symptoms, especially not for the interference with speech. I shall, therefore, trephine over the motor area of the left side of the brain, following symptoms rather than external appearances. A semi-elliptical incision exposes the left parietal region. The periosteum is retracted, and a chisel-wound made to catch the centre-pin of the trephine. I have endeavored to approximate the speech-centre, not by measuring by a scale, but from a general remembrance of anatomy. If the clot is large enough to require removal, I can get near enough to it in this way, and we almost always have to enlarge an opening after finding a clot, in order to meet particular indications. So far the operation is purely exploratory. It is possible that a localized meningitis could have produced some of the phenomena noted here, but hardly the aphasia. The patient's skull is thick—though this is no index as to his mental abilities. The dura is not bulging, but it is discolored by a clot beneath, and on incising it the clot is gradually pushed out by the pulsations of the brain. The clot is quite tenacious, showing that it is not very fresh. I have caught a small bleeding vessel with a hæmostat. Further oozing I shall endeavor to check by using this antipyrin spray. The clot is removed partly by the sharp spoon and partly by wiping with aseptic gauze, which has almost supplemented the sponge in modern surgery, the latter being so difficult to render aseptic.

I am glad to give Dr. Weidenbauer credit for sending this case to the hospital. He recognized the condition present, realized the importance of surgical relief, and has done everything possible except performing the mechanical part of the treatment.

It is quite probable that as the patient recovers from the anæsthetic, the relief of pressure will be manifested by speech and the rapid recovery of consciousness. The wound is dressed antiseptically, without complete closure of the scalp-wound, as we wish to provide for the easy evacuation of any further blood-clots that may be formed.

CLINICAL MEMORANDA.

CASE OF TRAUMATIC SEPTIC MENINGITIS. TREPHINING. TEMPORARY RECOVERY, FOLLOWED BY LARGE ABSCESS OF BRAIN.

BY ANDREW J. McCOSH, M.D.,
OF NEW YORK.

THE following case is of interest for three reasons: First, the marked improvement which followed the opening of the skull and drainage of the meninges, resulting apparently in cure or at least in the temporary recovery of the patient. Second, the persistence of the sepsis within the cranium for a period of four months without constitutional or local manifestations. This was proved by the presence of the same species of bacilli at the two operations. Third, the existence of an enormous cerebral abscess (eight ounces) and the absence of grave symptoms. There were no paralysis, no convulsions, no delirium or subnormal temperature, neither was there marked elevation of temperature. The only symptoms were moderate pain, a slight stupidity, and finally vomiting, but for ten days or more the patient had walked about as usual, had eaten with a good appetite, and had been fairly intelligent in spite of the presence of a large collection of pus in his brain. The fatal result due to pneumonia is another example of the close connection between sepsis in the brain and sepsis in the lungs.

H. H., aged thirty years, was struck or kicked on the forehead in a fight on *October 1, 1894*. He walked home, and made no special complaint until the following day, when he suffered from headache in the frontal and parietal regions, and felt so feverish and weak that he remained in bed. Toward evening he became

restless. On the following morning (*October 3d*) he was rather apathetic, and his restlessness had increased. His symptoms became worse during the day, and in the evening he was brought to the hospital in the ambulance. On admission he was stupid and complained of severe headache. Temperature 102°, pulse 80, respiration 30. The pupils were contracted and regular. There was no paralysis. At times he was very restless. Knee-jerks unaltered.

4th. Stupor had increased. He could be aroused with difficulty, and would then moan and show great irritability for a few minutes and again lapse into stupor. Temperature 100°, pulse 44 to 58, respiration 16. Operation was advised, as it was thought that there was a blood-clot pressing on the brain and probably a meningitis.

5th. Complete coma. Temperature 101°, pulse 40 to 50. Consent to operation was obtained.

Operation, October 5th. Chloroform. A semicircular flap with the apex just above the brain-line was dissected downward and the frontal bone exposed. A linear fracture one and one-half inches long was seen running in a vertical direction from left to right almost over the longitudinal sinus. There was no depression of bone. A one-inch trephine was applied just to the right of the median line, and on removing a button of bone an extradural blood-clot was seen alongside of the longitudinal sinus and evidently caused by a rupture of its wall. The opening was enlarged by rongeur (Lüer) forceps. On removing the clot the hemorrhage from the sinus started afresh, but was easily controlled by pressure. When the dura was exposed it was seen that there was no pulsation. As soon as the knife punctured this membrane a stream of turbid serum spurted out with considerable force. Two ounces of fluid escaped. Another blood-clot was found under the dura, and it was scraped away. The pia mater was then seen to be gray, cloudy, and without lustre, and was in astate of inflammation. Another trephine-opening for the sake of drainage was made over the left frontal eminence, and in this side there was also found both an extradural and intradural blood-clot. Irrigation with salt solution was employed. Horsehair-drains were inserted inside the dura through each opening. The scalp-flap was loosely fastened in place by a few sutures and strips of gauze inserted on each side. During the operation the pulse had risen from 38 to 85. The bacteriological examination of the fluid showed numerous colonies of streptococci and staphylococci.

6th. Coma not complete. He could be aroused, and he began to be delirious. Temperature 100° to 102°, pulse 86 to 100, respiration 24.

7th. Very noisy and delirious. Temperature 101° to 102½°, pulse 80 to 90, respiration 18.

During the first week after the operation he continued very noisy with almost constant delirium. Temperature 100° to 102°, pulse 75 to 80.

The wound was dressed on the fifth day, and the dressings found soaked with considerable serous discharge.

Second week (*October 12th to 19th*) there was but little change. Temperature ranged between 100° and 102°, pulse 80 to 100.

Third week (*October 20th to 27th*) there was a slight improvement. The temperature was lower—99½° to 101°. The pulse varied between 80 and 100. At times he talked intelligently, and would answer questions, though for the greater part of the time he was noisy and delirious.

Fourth and fifth weeks (*October 28th to November 12th*) improvement continued in his mental condition, but not in temperature. During the day he was comparatively quiet, though often irrational, and always noisy at night.

Sixth to eighth weeks (*November 12th to December 3d*) his mind gradually became clearer, he talked intelligently with his friends, and manifested interest in his surroundings. At night he was still restless. Temperature remained between 100° and 102°.

On *December 6th* he was out of bed, and soon began to move about the ward. His memory was not good, his mental movements were sluggish, and he was still occasionally irrational at night. After *December 11th* his temperature remained below 99½°.

On *December 24th* his fever had entirely disappeared. Appetite good. No headache. Wound completely healed. Discharged apparently cured. Two weeks later he returned to the hospital on a visit, and talked intelligently with the patients, and, while somewhat sluggish yet, he seemed comparatively well mentally and physically. For four months after he left the hospital he was entirely free from pain, fever, or sign of mental aberration. He was able to do light work, and seemed happy, though his wife noticed some loss of memory and occasional attacks of stupidity or indifference to his surroundings. About the first of April he began to complain of pain in the region of the right trephine-opening, and noticed a bulging outward of each opening. A few days later he felt sharp pain in his right eye, and also some pain on the left side of the frontal region. He also appeared rather stupid. He was readmitted to the hospital on *April 15, 1895*. He complained of severe pain in the right eye, over the right trephine-opening, where there was a pulsating swelling the size of a small egg. There were also a bulging of the left trephine-opening and some pain in the left eye. Pressure on the projecting masses increased the pain in his eye and produced dizziness. There was no paralysis of motion or sensation. The patient walked about the ward, and conversed intelligently, though his reasoning-power was slow in its action. He was not restless, but was rather torpid. Temperature 98½°, pulse 100, respiration 24.

Diagnosis, probable cerebral abscess.

16th. Temperature 99°, pulse 70 to 80. Pain less severe when he remained in bed.

17th. Temperature 99° to 99½°, pulse 80 to 96, respiration 20. Complains he cannot sleep.

18th. Patient walked over to the dispensary and back (quarter of a mile) for an examination of his eyes. Slight congestion of the right fundus was found. Temperature 99½°, pulse 80 to 90. Pain more severe. Vomited several times.

19th. Vomiting. Bulging through trephine-openings increased. Stupidity more marked. No paralysis. When spoken to answers questions intelligently. Special senses not affected. Pupils react regularly. Knee-reflexes lost.

20th. Operation. Chloroform-anæsthesia. A semilinear skin-flap was dissected from the frontal bone and

from the dura mater which bulged out of the trephine-opening, to which the flap was very adherent. The dura was much thickened. An aspirating-needle passed into the brain-substance drew out pus. The dura was incised around the upper margin of the right opening, and under it was found brain-tissue mixed with granulations. This was scraped away with a sharp spoon, and immediately a jet of thick greenish pus spurted out to the distance of two feet. The opening in the brain was enlarged, and the pus continued to flow until eight ounces had escaped. It was then seen that the bulging over the left trephine-opening had collapsed. The finger passed into the abscess-cavity found it lined with a smooth, uniform membrane which bled but slightly. The cavity was as large as a man's fist, and occupied apparently the entire frontal lobe on the right side, with the exception of a thin shell of cerebral tissue which formed its wall. The cavity also extended into the left frontal lobe. The dura was opened on this side, and the finger thrust through a thin layer of granulating cerebral tissue passed into the abscess-cavity. This was then gently washed out with boric-acid solution, and drained through each trephine-opening by a rubber tube and strips of gauze.

Before the operation, temperature 99½°, pulse 80. Two hours after operation temperature 102°, pulse 120.

21st. Temperature 100° to 102°, pulse 80 to 100, respiration 16 to 20. Free from pain. Mind brighter.

22d. Temperature 100° to 101°, pulse 90. No paralysis. No vomiting, Rather restless. Wound dressed.

23d. Temperature 100°, pulse 80 to 90. Takes more interest in surroundings. No pain.

24th to May 8th. Temperature 100° to 101°, pulse 80 to 100. Occasionally very restless. Takes nourishment. No paralysis. Hernia cerebri springing out of wound. Very little discharge.

9th to June 1st. Temperature 100°, pulse 90 to 110. Mental state more clouded. Some weakness. Occasional delirium. Gradual loss of strength. Hernia cerebri increases in size in spite of frequeut clippings.

1st to 7th. Patient somnolent. Refuses food. Delirious at night. Decidedly weaker. Temperature 101°, pulse 88–100.

8th. Distinct change. Unconscious. Temperature 104½°, pulse 120, respiration 36. Labored breathing. Unable to swallow.

9th. Temperature 106°, pulse 120, respiration 40. Comatose. Died in the afternoon.

REPORT OF AUTOPSY BY DR. J. S. THACHER.

Brain. Abscess-cavity size of fist occupies most of right frontal lobe back to about one inch in front of fissure of Rolando. Wall in front is a thin membrane which becomes gradually reinforced with brain-tissue. The whole anterior part of the right hemisphere was enlarged at the expense of the right temporal lobe and of the left frontal lobe. On microscopical examination abscess-wall composed of granulation-tissue, simple inflammation. A few pea-sized spots of suppuration at tip of left frontal lobe.

Lungs. Consolidation of apex of lower lobe of left lung; other patches scattered through the upper and lower lobes. In right lung patches of pneumonia distributed as in left.

A CASE OF CONGENITAL OCCLUSION OF THE COLON AT THE ILEOCÆCAL VALVE.

BY CARL WEILAND, M.D.,
OF PHILADELPHIA.

As cases of congenital occlusion of the intestine are very rare, only two such cases in 111,451 patients having been recorded at the Vienna Foundling Hospital, according to E. Theremin,[1] it would seem of interest to put on record the following example of this hemiteratic anomaly:

On October 26, 1895, at 2 P.M., Mrs. Wr., primipara, aged thirty-four years, of Philadelphia, gave birth at full term to a boy of apparently perfect development. Nothing unusual was observed in the infant until October 27th, at 1 A.M., when the child began to vomit a darkish fluid which left only a light-colored stain on the clothing. As the child had been given some tea of a similar color it was supposed to be that; at any rate, no pathognomonic odor could be detected. This vomiting occurred on that day whenever the child was given some nourishment. As toward evening the bowels had not moved, in spite of a little piece of soap that had been put into the rectum, an injection of lukewarm water with a little soap was given, which returned immediately and brought small cylindrical masses of white mucus about 5 mm. in diameter. This, of course, aroused suspicion at once; but the next morning conclusive evidence of an internal pathological condition was furnished by the vomited matter, which now was distinctly fecal in odor and had the appearance of meconium. As the first thought was that of intussusception a soft-rubber catheter was introduced into the rectum, which could be pushed up about eight inches. Then the nates of the child, who was already very weak, were raised and plain lukewarm water was injected with a Davidson syringe. As the injection returned at once, the anus was gently compressed, and about two ounces of water were again injected. This procedure increased the vomiting of fecal matter very much, and so was stopped at once; but the vomiting continued, respiration became embarrassed, and soon the child died, about forty-eight hours after birth. One hour later Dr. U. W. Vollmer kindly assisted me in making the post-mortem examination, which showed the following condition of the intestinal tract:

The small intestine showed great vascular injection and was much distended with gas, especially near the ileocæcal valve. Here the diameter of this viscus was about 18 mm., the same as that of the caput cæcum, with which the small intestine was continuous, as the lower fold of the ileocæcal valve was absent or, rather, very little developed. The upper part, however, of this valve, the ileocolic fold, was developed too much, for it stretched across the whole lumen of the bowel and formed a complete septum between the colon on the one side and the cæcum with vermiform appendix and small intestine on the other side. There was not the slightest chance for a communication between these two parts. Below this anomalous diaphragm the cæcum and small intestine showed well-developed villi, and the entire mucous membrane was stained brown with biliary pigment and showed a small amount of

[1] Deutsche Zeitschrift für Chirurgie, 1877, Bd. viii.

meconium. Above the abnormal septum the large intestine was very much contracted, having a diameter of only 5 mm. It also had no ascending part, but the transverse colon turned back at once to the posterior aspect of the abdominal cavity and ran transversely as far as the usual position of the splenic flexure, where the descending colon commenced. The whole colon and rectum, about ten inches in length, contained only soft, white mucus, and not the slightest trace of meconium. Its surface looked white compared with the color of the small intestine, and its walls were thin, having apparently been arrested in its development.

The time when the septum must have formed we can fix, with great probability, as follows: As meconium appears in the intestine about the end of the fourth month of intrauterine life, and as no meconium was present in the large intestine, it is evident that the septum must have formed before the end of the fourth month. On the other hand, it is known that the transverse colon is developed at the third month, and the ascending colon at the fifth month, from which would follow that the large intestine of this case was arrested in its development at about the fourth month. If we further assume, as would seem justified, that both phenomena, the appearance of the septum and the arrest of development of the colon, had *one* underlying cause and occurred at the same time, we come to the probable conclusion that we had to deal with an infant born with a rudimentary colon and a total occlusion of the intestine which had formed at the fourth month of intrauterine life.

315 NORTH SIXTH ST.

FOREIGN BODIES IN THE EAR.

BY ROBERT BARCLAY, A.M., M.D.,
OF ST. LOUIS;
AURAL SURGEON, ST. LOUIS CITY HOSPITAL, ETC.

THE circumstances and phenomena attending the presence of a foreign body within the external auditory canal are so many and so varied that the condition seems to present endless curious and instructive features. Three cases recently met with seem to possess such features sufficiently unique to entitle them to the consideration of the intelligent readers of THE MEDICAL NEWS, than whose columns can be found a no more lasting nor well-known nook for the preservation of clinical *memorabilia*.

"Invisible hairpin," broken, and caught within ear.—A rare case of ensnared aural foreign body is that of a lady, aged about forty years, who, while "picking" her left ear with a so-called "invisible hairpin," several hours before the consultation, had heard a sudden "twang" and sticking in the ear, as if the hairpin had broken. And so, indeed, it had done; for on the instant as she, startled, had attempted to jerk it quickly from the ear, the sharp extremity of the inner portion of its lower prong sprang away from its fellow, penetrated the soft tissues of the floor of the external auditory canal, and remained imbedded there; the separated end of this prong only coming away in her grasp. Every attempt on her part to remove the hairpin by traction on its projecting prong—she durst not force it *inward* for fear of wounding the drumhead—had served but to bury the point of the broken prong more deeply into the flesh of the canal, thereby increasing her suffering. Advised by her family physician not to delay, she forthwith sought advice and aid.

On examination, it was found that the lower prong of the "invisible hairpin" had broken at the outer end of its wavy portion, and seemed firmly imbedded in the floor of the auditory canal, now quite inflamed, at a point about one-third of its depth from the outlet of the canal. The loop or turn of the hairpin was about one-half inch from the flaccid portion of the drumhead; and together with the unbroken prong, it lay closely against the roof of the canal. Projecting from the meatus there was enough of this prong to be easily grasped between one's thumb and finger.

Removal of the hairpin was effected by first inserting within the meatus a Gruber speculum, encircling the unbroken projecting prong, and then raising the end of the broken one with a long-shanked aural hook, when the hairpin was readily withdrawn.

Under one or two applications of a vulnerary, the wound of the canal floor promptly healed.

Characteristic effects of bird-shot thrown into an upturned ear. CASE No. 103,672.—One morning as this young clerk, aged eighteen years, was lying upon his left side, facing the wall, his cousin, from a distance of seven feet, playfully pitched a few—say, ten or twelve—bird-shot onto his right ear and face. He felt shot enter the ear and deafen him temporarily; and on turning this right ear downward saw three shot roll out. There was now no pain nor tinnitus; but the ear felt stopped up, "a stuffiness, not a decided deafness," which "opened up whenever he swallowed." Slight headache came on toward evening, but disappeared during sleep. Upon awakening the following morning another shot rolled out of this ear. This settled his determination to consult his physician, who at once referred him to me.

On examination, his right drumhead was found a trifle congested, but otherwise normal.

A mild tympanic inflation, together with mercurial aperient, effected complete relief from his aural symptom.

Hard foreign body adherent to the drumhead. CASE No. 103,687.—A curious instance of foreign body upon the drumhead was that of a retired capitalist, an American, aged forty-six years, who for two weeks had suffered from deafness on the left side, with occasional tinnitus, but without earache. One month before he had had a severe attack of acute coryza, for which he had sniffed up some "Pond's extract of witchhazel," blowing his nose immediately thereafter. Upon development of his aural symptoms, of which pain was one at the onset, leeches had been applied about his auricle, and for two days, morning and evening, for about twenty minutes his ear had been douched with hot water.

At the time of our consultation he could hear with the affected ear a forty-eight-inch watch on contact only, and low voice and whisper at a distance of fifteen feet.

On examination of the left ear the vibrating portion of the drumhead appeared thickened, opaque, lustreless, and somewhat retracted; the flaccid portion and entire periphery much congested, and the short-process of the handle of the malleus barely recognizable. Just in front of the handle, however, was a dark body, resembling a dried blood-clot, but thicker. This was about three-sixteenths of an inch long, one-sixteenth inch in diameter,

apparently roughly cylindrical in form, and parallel to, and as if closely adherent to the handle of the malleus.

Removed with Sexton's foreign-body hooked curette, it proved to be a heavy, very hard, brownish-black mass. Its nature has not yet been determined, but it is supposed to be a coal-cinder.

After its removal the tympanum was inflated by Politzer's method, when testing proved the hearing for the forty-eight-inch watch to be as high as one-eighth of an inch.

He made a rapid recovery.

3211 LUCAS AVE.

MEDICAL PROGRESS.

Syphilitic Gummata of the Heart.—During a recent meeting of the Montreal Medico-Chirurgical Society (*Montreal Med. Journ.*, vol. xxiv. p. 474) DR. FINLEY presented the report of a case of syphilitic gummata of the heart and liver, and exhibited the pathological specimens showing the characteristic lesions.

Tetanus Treated with Antitoxin.—E. H. HOWLETT, F.R.C.S., reports (*Med. Chronicle*, vol. iv. p. 186) a case of tetanus in a lad of fourteen years, arising about two weeks after the receipt of gunshot-wounds in the legs. The repeated administration of antitetanic serum produced no immediate effect upon either the spasms or the general condition of the patient, but rapid improvement took place in the appearance of the wounds. Convalescence was established in twelve days.

Why is the Abdomen Opened in the Middle Line?—DR. F. WINSON RAMSAY (*Lancet*, No. 3370, p. 1355) asks this pertinent question, and refers to the unanimity of operators in this selection. The usual reasons given for preference for the median incision are (1) less hemorrhage; (2) fewer important structures to encounter; and (3) easy access to all parts of the cavity. These Dr. Ramsay considers imaginary and really points of disadvantage. In the first place, the matter of hemorrhage, there is no reason to fear troublesome bleeding in any part of the abdominal wall, and if slight in the linea alba, it shows a lower vitality there, and hence a delayed or imperfect union may result. Secondly, the whole depth of the incision being through fibrous or tendinous tissue the young operator may enter the cavity unexpectedly, injuring its contents, and in closing the wound he will find difficulty in readjusting the several layers as accurately as if they were distinctly separated by muscular tissue, etc. Thirdly, the greater facility afforded in exploring all parts of the cavity is overestimated, and more than outweighed by the presence of the umbilicus immediately in the way when it becomes necessary to extend the incision upward. To render the umbilicus strictly aseptic is a difficult, if not impossible, task.

The writer suggests that abdominal section be made vertically through the rectus muscle on either side, and contends that here the operator will meet all of the advantages and encounter none of the disadvantages mentioned above. He has recently put it to a practical test in five operations, and is convinced that its advantages are not alone a matter of theory, but real.

Some of the Immediate Results Produced by Castration in Cases of Enlargement of the Prostate.—DR. C. W. MUNSELL MOULLIN (*Lancet*, No. 3770, p. 1347) calls attention to an unexpected immediate effect following castration, to wit, the recovery of power to void the urine naturally ofttimes within the first few hours after the operation. Sometimes this has remained permanent, but usually there is a temporary relapse. He cites many cases illustrating this point, one of which was observed by Mr. Hunt, of Wolverhampton, wherein micturition was naturally performed two hours after the operation, and continued so for five days, when the use of the catheter had to be resumed. An item of especial interest in this case was a tonic spasm of the muscles about the anus, lasting for some time, quite the opposite having been their condition previous to the castration.

Clearly this rather astonishing result cannot be explained upon the ground of atrophic changes in the gland, even though they appear after six or eight days. Nor will the feature of rest in bed, etc., be counted as a factor, for in most instances this is part of the preparatory treatment. Prof. White accounts for this by early changes in the median lobe of the body, which is so prone to act as a valvular obstruction; but this is obviously faulty, for time enough has not elapsed for any real diminution in its size, although atrophic changes are known to begin in the organs within a very few days; and, further, such decrease in size, did it occur so early, should be permanent, which will not explain the period of relapse so common in the progress of these cases.

In the estimation of Dr. Moullin, the only reasonable explanation lies in the active stimulation produced by ligature of the spermatic plexus upon the vessel-walls, as well as the voluntary muscular tissue throughout the pelvis—as exemplified by Mr. Hunt's case cited above. The sudden and active stimulation of these nerve-trunks by ligation is certainly capable of producing just such results as have been observed, and their gradual subsidence will also coincide with the gradual adjustment of the injured nerves to the new conditions.

THERAPEUTIC NOTES.

Permanganate of Calcium.—NARDAS (*Gaz. Méd. de Paris*) speaks of the superior power of oxidizing possessed by this substance. When brought in contact with organic matter it is at once resolved into manganese dioxide and lime, giving off oxygen. Experiments prove it to be superior to bichloride of mercury and quite free from toxic or caustic properties.

For Diphtheria—

℞—Sodii sozoiodolat. . . . ℥jss.
Saccharin. . . . . gr. x.—M.
Fiat pulv.

S. A small quantity to be blown into the pharynx every four hours.

℞—Sodii sozoiodolat. . . . ℥ss.
Sulphur. floris . . . . ℥j.
Saccharin. . . . . gr. x.—M.
Fiat pulv.

S. For insufflation.

—SCHWARZ, *Wiener klin. Woch.*

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed *exclusively* to THE MEDICAL NEWS will after publication be liberally paid for (accounts being rendered quarterly), or 250 reprints will be furnished instead of payment. When necessary to elucidate the text, illustrations will be engraved from drawings or photographs furnished by the author.

Address the Editor: J. RIDDLE GOFFE, M.D.,

No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM, IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . . .	7.50

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

LEA BROTHERS & CO.,

No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK, AND NOS. 706, 708 & 710 SANSOM ST., PHILADELPHIA.

SATURDAY, JANUARY 11, 1896.

THE STATUS OF THE MEDICAL ARM OF THE SERVICE IN CASE OF WAR.

HAPPILY the war-cloud has blown over. We draw a sigh of relief as we think of the ills that threatened us for the moment which, for the present at least, have vanished. War may mean glory and renown and countless heroes; it may also mean defeat and disgrace; it always means desolation, sorrow, and horrors unspeakable.

No one can have a keener conception of the force of these facts than the members of the medical profession, who, in their daily lives, see so much that requires nerve and patience and self-control. At the same time, should the country be imperilled and its existence threatened, there is no class of citizens which would be found more ready to make sacrifices, endure trials, and give their lives if necessary in its behalf.

How was it in the Civil War? The losses by death and disability in the medical corps were relatively greater than in any other arm of the service. On the field of battle the surgeons, although non-combatants, pressed toward the front, regardless of personal safety, and often lost their lives in the absorbing interest of the hour. The motive was not curiosity nor mere recklessness, but the desire to be where the need for their services was greatest. Others were worn out by the strain and fatigue of hospital service. We all know something of the tax which is sometimes imposed by hospital service in civil life; what must it be in time of war, with a hundred imperious demands upon a doctor's time and force at once? Those men who underwent such trying experiences were not mentioned in the reports for special bravery, medals and distinctions were seldom distributed among them, neither did they seek or expect them.

When we remember that at the close of the war there was scarcely a score of medical colleges in the country, that hospital experience prior to the war was limited to a mere handful of those who entered the service, that therapeutics, medical and surgical, was in its infancy compared with its present condition; when we consider, furthermore, the enormous numbers of sick and wounded successfully cared for, medical supplies obtained and distributed, and obstacles overcome in accomplishing these results, the magnitude of the work becomes apparent. To feel the touch of kinship with men of such achievements thrills one with joy and admiration.

The war-cloud has vanished; it is to be hoped it will not again appear above the horizon; if it should, there need be no question as to the loyalty and devotion of the medical corps.

But something more than these sentimental qualities would be required: skill in organizing hospitals, with their complicated equipment and supplies, profound knowledge of military hygiene, ability to organize means for the rapid and easy transportation of the sick and wounded, not alone to the field-hospital, but to the place where treatment, whatever its character may be, will be completed; in a word, all that pertains to the sanitary condition of marching and fighting men, or men in camp, usually grouped together in large bodies, are essential qualifications. That there should be skill and experience in the treatment of disease and injuries goes without saying. Nor is it to be forgotten that good sanitary regulations sometimes decide battles.

How does the present medical situation compare with that which confronted us in 1861? The material and intellectual development of the country during the past thirty years is an answer to the question. Instead of a few medical colleges, none of them of the first rank as we now understand it, we have probably twenty which, as well-equipped centres of

instruction, will compare favorably with similar institutions anywhere in the world. A very much larger number of lower grade colleges, while inferior in their opportunities and advantages, are serving a useful purpose as auxiliary to the others. Hospitals, where there was one at the close of the war there are now a hundred, and if there is anything of value in any hospital on earth that has not been tried in our principal hospitals East and South and West, it is because it has thus far been successfully concealed from inquisitive American eyes. With such colleges and hospitals, with opportunities for culture here ever broadening, and with opportunities for study abroad, of which thousands of the present generation of doctors have availed themselves, and with patriotism and loyalty to duty which are unquestionable, it is not to be doubted that with the first call to arms a medical corps could be quickly organized which would be ample as to quality and personnel for almost any conceivable requirement. Fortunately, too, the head of the medical department of the army at the present time not only reflects lustre upon the army and the country by his scientific achievements, but possesses executive capacity of a rare order, which would enable him to expand the service judiciously in case of need, and distribute to administrative posts the officers of tried experience, some of whom saw service in the Civil War. Of great assistance also would be the medical officers of the national guard, whose experience in the summer camp and whose systematic training of successive ambulance-corps have developed an organization of pronounced efficiency.

The transfer of duties and relations from civil to military life, with its discipline, its subordination to authority, and the other conditions incidental to the life of a soldier, would be found difficult and trying to many men of excellent capacity and great usefulness, who nevertheless chafe under restraint and routine regulations. We would suggest that in the curriculum of our medical colleges a very distinct period be allotted to the study of military surgery and the special duties which pertain to the military surgeon. It would also be well if some extension of the military system were applied to our hospital management, at least in the larger cities, where the hospitals would at once be required for military purposes, and from which the higher medical officers would probably be promptly drawn.

It may not be inappropriate to inquire as to the character of the work of the medical corps if war should occur. An interesting article bearing upon this phase of the subject has recently appeared from the pen of Sir William MacCormac. He speaks of the greater velocity and smaller size of the missiles now in use as necessarily effecting a change in the character of the wounds which would be received and require treatment in war. There would be more penetrating, fewer lacerated and bruising and crushing wounds. The wounds produced by these small missiles, if not instantly fatal, would have small openings of entrance and exit, and would be relatively difficult to treat. There would be fewer coarse wounds of bayonet and sabre, there would certainly be fewer gangrenous wounds, because of antiseptic treatment immediately and universally applied. There would be fewer wounded by whatever means, there would be more killed outright. The improvements in our ambulance-system, the existence of railroads at almost any point in this country, or in any other in which battles are likely to be fought, will greatly simplify the question of transportation of the wounded. If the terrible effectiveness of modern firearms will tend to shorten a war between two great powers because of the losses which one or both would sustain, equally true is it that the resources of modern scientific medicine would permit a larger percentage of the sick and wounded to be quickly restored to duty and effectiveness than at any previous period of history. What a striking contrast these two facts afford, superlative destructiveness on the one hand, superlative beneficence on the other.

WHAT DETERMINES THE LOCALIZATION OF DISEASE?

THE accurate localization of disease has been the chief aim and study of the diagnostician during the last fifty years. And wonderful are the advances which its enthusiastic pursuit has led to. Such terms as "general debility," "asthenia," "phlogistic," "bilious," "sanguine," "lymphatic," "amaurosis," "rheum," "decline," etc., have almost disappeared from our vocabulary, and the gain both in clearness of our conceptions of disease and efficiency in combating it has been enormous. In our systems of medicine nowadays almost any disease, except the contagia and the diatheses, is referred to some special organ as the chief seat of its processes; but this wonderful progress has simply been gradually bringing us face to face with another problem behind all this, and of even

greater interest and practical importance, "What determines the localization of disease?" Is it some peculiarity in the organ affected itself, some special pressure of the environment upon it, or some disturbance of the general nutritive balance between all the organs of the body? Or is it some ancestral tendency of the organ or part which lies deeper than any of these? We have only reached the point as yet where we can ask these questions, not answer them, in most cases; but there is one field of research from which are beginning to come some highly interesting and valuable suggestions as to the possible nature of one class of causes of the localization of disease. And this is the rapidly developing department of evolutionary pathology.

From the point of view of this school there is a strong and growing tendency to regard many forms of morbid action as reversion to processes which were normal or physical in these tissues at an earlier stage of their ancestral development. For instance, calcareous degeneration is a "dropping back" to the simpler and easier processes of the coral-polyp or chalk-animalcule (*Globigerina*) stage of our development, fibroid change a sinking on the part of the cells involved to the sponge-level, cancer a "rebellion" of the glandular epithelium, involving a return to the anarchistic "every-cell-for-himself" hydroid stage, gout a falling of the lever and muscle cells in the avian or reptilian stage, in which uric acid is their normal product, etc. According to this suggested theory, any prolonged lowering of the nutrition or vitality of a part or of the entire system, whether from local causes, such as fibrotic arteries, or from general, such as underfeeding, excessive exposure, insufficient supply of oxygen, senile changes, etc., may be sufficient to set up one of these reversionary degenerations and thus account for a large class of disease.

But this cannot be further discussed here, as it is to another suggested factor in the causation or localization of disease we wish specially to call attention. And that is the "age," both embryonic and ancestral, of the organ attacked. It is an accepted rule in both biology and psychology that those parts or properties which are the last to appear in an organism are usually the first to disappear. The flowers of plants, the cells of the brain-cortex, the menstrual function in woman, the highest power of the intellect and imagination, and in a race the higher social virtues and graces, in famine or war, for instance, are illustrative cases. Now, while it is impossible to arrange all the organs of the human body in the exact order of their age or antiquity, yet there are several of them which are obviously much later in the embryologic development and thousands of generations more recent in ancestral history than the mass of the others.

Conspicuous among these are the uterus and mammary glands of the female and the lungs in both sexes. The rudiments of a stomach appear in the amœba, of a muscle-nerve apparatus in the hydra, and of a heart in the mollusc; but the whole invertebrate world with its myriad forms of life is traversed, and three or four of the widest strata of the vertebrate before the air-breathing lung appears in the amphibia. And the same order is followed in the embryo, even the gill-clefts, bars, and arteries putting in their appearance first as if to emphasize the thought what a mere parvenu the lung-sac is. The case of the uterus and milk-gland is even more marked, for the methods of parturition are such as to render both of them unnecessary right up to the very latest and smallest class of even the vertebrates, the mammalia. And by a singular coincidence all three of these organs are peculiarly subject to disease, and to a degree for which no adequate explanation has yet been advanced. Diseases of the lung, for instance, are responsible for one-fourth of the entire death-rate, more than double the proportion which can be attributed to any other single organ or even system, while the uterus and mammæ are the site of nearly 60 per cent. of all cases of cancer in the female.

In the case of the lungs, part of this extraordinary susceptibility may unquestionably be explained by the strain to which they are subjected by the sudden and frequent changes in their special environment—the atmosphere; but this can account for only a minor part, as some 65 per cent. of the lung death-rate (45 per cent. of the entire rate) is due to a single specific process—tuberculosis—which can hardly be attributed to exposure. The same is true of the uterus and mammæ, the overwhelming mass of whose fatality is caused by a special disease, carcinoma, in whose causation neither functional strain nor traumatic injury can play more than the slenderest part, popular and even professional superstition to the contrary notwithstanding.

Would not this peculiar morbidity of all three of these organs be best explained upon the principle of the general law already referred to, that late ap-

pearance means early decay, and that morphologic and ancestral weakness is usually accompanied or followed by premature functional senility? This, I think, can be almost demonstrated in the case of the uterus and mammæ, the vast majority of whose peculiar diseases develop only after their functional activity has ceased and they have become practically supernumerary organs, waste tissue in the body, which, like "dirt" elsewhere, is sure to breed disease.

ECHOES AND NEWS.

VON BRUNN, professor of anatomy in the University of Rostock, is dead.

THE *Lancet* has despatched a special correspondent to the seat of war in West Africa.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS will be held at Moscow from June 7 to 14, 1897.

THE ALBERTO-LEVY PRIZE of 50,000 francs has been awarded by the Paris Academy of Sciences to Professors Roux and Behring in equal parts.

DR. JOHN D. ROSS, of Williamsburg, Blair County, Pa., has just completed the sixtieth year of a continuous subscription to the *American Journal of the Medical Sciences* and to THE MEDICAL NEWS since its first issue. He is now in his ninetieth year, and still takes an active interest in medicine.

LUDWIG TEISCHMANN, formerly professor of anatomy at the University of Cracow, died recently at the age of seventy-three years. His name was generally known in association with hemin-crystals, of which he was the discoverer, and which have such profound significance in medical jurisprudence.

THE CHAMBER OF COMMERCE has been occupying itself with a study of light and air with the intent to restrict the skyward aspiration of buildings. In Berlin the height of buildings is limited to the width of the street; in Paris to about 50 per cent. over such width; in Chicago to 130 feet, and in Boston to two and a half times the width of the street.

THE explanation for the increase in the New York tax-rate, given by the Governor, shows that it was largely due to increased expenditures for new charitable purposes, including a very considerable item for the "new institutions ordered by the Legislature."

Perhaps if we would put some of the money that now goes into "homes" and asylums into school-houses we might have fewer paupers and lunatics to support.

IF it were the custom to erect a monument to a man in his lifetime for services to humanity, Dr. Haffkine of all men deserves one. After inoculating forty thousand persons for cholera in India at considerable personal expense he is returning to Europe shattered in health. It is doubtful if he will ever be able to expel from his system the Assam malaria which brought his noble experiments to a close. His inoculations reduced the death-rate materially.

ON the 15th of July last Dr. S. Moos, of Heidelberg, one of the founders and editors of the *Archives of Otology*, died on his sixty-fourth birthday. Rising from an obscure parentage, and battling with the most adverse circumstances and many difficulties, his heroic courage overcame all, and enabled him to write his name among the foremost scientists of his age. His writings have greatly enriched the literature of his specialty. In recognition of his merits his sovereign bestowed upon him the honorable title of counsellor.

THE recent election at the New York Academy of Medicine resulted in the election of Egbert H. Grandin, Vice-President; Joseph E. Janvrin, Trustee; Herman L. Collyer, member of Committee on Library, to serve four years; B. Farquhar Curtis, member of Committee on Library, to serve five years; Robert A. Murray, member of Committee on Admissions; William S. Gottheil, Reginald H. Sayre, Ralph L. Parsons, and Charles H. Richardson delegates to the Medical Society of the State of New York.

FROM the returns of the last census from the city of Paris, compiled by Dr. Bertillon, it appears that there are 2922 medical men residing in the capital, and of this number 521, or upward of one-sixth, are foreigners. The total number of foreigners living in Paris being 181,000, there are, consequently, 2.87, or in round figures 3, foreign physicians to 1000 foreigners, whereas there is only 1 (exactly 1.07) French physician to 1000 French inhabitants.

An examination of the table of professions shows that the practice of medicine attracts to the capital of France more foreigners than any other profession.

THE NEXT MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA has been appointed at Harrisburg, Pa., beginning Tuesday, May 19, 1896, and continuing for three days. The Committee on Scientific Business have issued a circular requesting that all papers offered shall be so condensed that they may be read in ten minutes, and that each discussion shall be limited to five minutes. The programme will be arranged as usual in the order in which applications may be received. The titles should be furnished the Chairman of this Committee as soon as possible, and not later than March 19th. The Chairman of the Committee is Dr. F. LeMoyne, Pittsburg, Pa., to whom all communications should be addressed.

THE Supreme Court of the German Empire has just pronounced sentence and ordered judgment in the following case: Dr. Max Böhm (Friedrichroda), a determined opponent of vaccination, some time ago was prosecuted for having certified to the successful vaccination by him of several children. The public prosecutor held that this vaccination was fictitious, inasmuch as a diluted lymph, incapable of conferring immunity, had been employed. The decision of the court at Gera, where the case was tried, was unfavorable to the defendant, but this judgment was reversed by the Supreme Court at Leipzig.

But the health authorities, instead of acquiescing in their defeat, again brought him up before the court at Gera on the same charge in May last. The court sentenced the defendant to two months' imprisonment. An appeal was again taken to the Supreme Court, but this time the judgment was sustained.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, January 2, 1896.

JOSEPH D. BRYANT, M.D., PRESIDENT, IN THE CHAIR.

INFANTILE INTUSSUSCEPTION. A STUDY OF 103 CASES TREATED EITHER BY ENEMATA OR LAPAROTOMY.

DR. FREDERICK HOLME WIGGIN read a paper with this title. He said that it was strange that at the close of the nineteenth century we should be still considering the comparative methods of treating intussusception which had been suggested many centuries ago—the method of intestinal distention by air or water and that of abdominal section. His attention had been first directed to this subject by a case of infantile intussusception coming under his own observation, and a search of the literature showed that this was very meagre in America and that it had received considerable attention in England. The importance of the subject was apparent when one considered that about 98 per cent. of the cases of infantile intussusception, if left to nature's care, terminate fatally.

At the outset one was met with the popular belief, shared by both physicians and the laity, that intestinal distention was a method which was both safe and, in many instances, successful, and that laparotomy in infants for the relief of this condition was uniformly fatal. If this opinion were founded in fact, of course there could be no choice of methods. To answer this grave question and to determine which method was the better, if each possessed certain real advantages, was the task which the author had set for himself, and he had begun his work by carefully collecting from English and American literature the histories of 103 cases of infantile intussusception. A study of these cases formed the basis of the present paper, but only a few illustrative cases were read, the remainder being intended solely for reference.

Dr. Williams has recorded in the *Lancet* for 1894 a case of intussusception occurring in an infant of eight months, seen on the first day of the trouble. After inversion combined with enemata and insufflation had failed to reduce the invagination, it was decided to try the effect of generating carbonic acid gas within the intestine. This was done by first giving an enema consisting of eight ounces of water in which was dissolved a drachm and a half of citric acid, and following this by an enema of eight ounces of a solution containing two drachms of bicarbonate of sodium. After holding the nates together for a few minutes, the tumor could no longer be felt, and the vomiting ceased. The patient made a good recovery. Among the cases unsuccessfully treated by enemata was one reported by Dr. F. Taylor and Mr. Golding-Bird. An intussusception of the ileocæcal variety was found in an infant of eight months, coming under observation on the first day. A tumor could be made out, and blood and mucus were passed by rectum. The tumor apparently disappeared after insufflation of air, but it returned some hours later, and then, under chloroform-narcosis, inflation was unsuccessfully tried again under increased pressure. The child died shortly afterward, and the necropsy showed that the invagination had not been reduced, but that an injection of water was capable of reducing the ileum, leaving the colon inverted. The latter proved to be gangrenous, and the injection at the necropsy caused several ruptures of the peritoneal and muscular coats.

Mr. Mortimer had reported in the *Lancet* for 1891 a case of intussusception occurring in an infant of eight months, coming under observation on the fourth day. The child was on the verge of collapse, but after stimulation two small enemata were given, and after the second one the tumor could not be felt. Opiates were given, and for two days there were some pain and increasing abdominal distention. The tumor then reappeared, and under chloroform, and with the reservoir raised three feet, several fluid enemata were given before the tumor partially disappeared. On each of the two following days a pint of water was injected at a lower pressure. The child died, and the necropsy showed three ruptures in the descending colon.

Dr. Edward Deansley recorded in the *Lancet* for 1894 a case of intussusception occurring in an infant of seven months, seen five days after the bowel had begun to protrude from the anus. Just prior to admission the symptoms had been aggravated by the mother giving castor oil. Under an anæsthetic an enema of one pint of water with an elevation of two feet was given, and this caused the disappearance of the tumor. The child was kept under opiates until the next day, and on the evening of that day the bowel again protruded and the vomiting returned. Reduction was again effected under chloroform, and also on the following day by the same method as at first. Twenty-four hours later the child died, and at the necropsy it was found that although the invagination was still unreduced, its reduction could have been easily effected by laparotomy.

In a case of intussusception occurring in an infant of three months, and reported by Mr. J. D. Mortimer, it was supposed that reduction had been produced by insufflation, but some hours later the child died in collapse, and the necropsy showed the invagination still present. It was then ascertained that with an enema under a water-pressure of two feet all of the invagination could be reduced except about one inch of the ileum, together with the cæcum and appendix. Only a little more reduction was produced by increasing the pressure to three or four feet, and in a few minutes the colon ruptured in three places. It was worthy of note, however, that the invagination was very readily reduced by manipulation from below. The reader of the paper then referred to some experiments of Mr. Mole on infantile cadavers, and quoted his conclusions from these experiments as follows: (1) That no harm can be done healthy intestine by enemata of fluids under a moderate pressure; (2) that hydrostatic pressure is more uniform, and, therefore, less likely to cause rupture of the bowel; and (3) that the part most likely to be injured by overdistention is the transverse colon.

Out of the 103 cases of infantile intussusception presented in this paper nearly 50 per cent. occurred during the fourth, fifth, and sixth months in nearly equal proportions; 75.4 per cent. were in males, and 89 per cent. were ileocæcal. The probable causal relation of external violence was then referred to, and Pritchard and A. Jacobi quoted in support of this view. It seemed prob-

able that the careless handling of infants and particularly the violent jumping of the little ones up and down to quiet their crying were responsible for many cases of intussusception.

As regards the symptomatology of the cases collected, nothing especially noteworthy had been observed. The disorder had manifested itself by sudden and severe abdominal pain, vomiting, bloody stools, and, in most cases, by the presence of an abdominal tumor. It should be noted that the presence of this tumor would have been overlooked in some instances had not conjoined abdominal and rectal palpation been employed. A protruding tumor at the anus was noted in 5 per cent. of the cases. A spontaneous cure by sloughing was observed in only 2 of the cases. Of the 39 cases treated only by inflation or enemata, or both, 16 recovered, giving a mortality of 59 per cent. In the 16 successful cases various methods were employed. In one case 9 enemata were necessary to reduce the invagination permanently; in 3 chloroform-narcosis was employed. The average hour at which treatment was begun was the forty-first, whereas in the 23 unsuccessful cases the average hour was the sixty-ninth. In reality, 72 cases were treated by intestinal distention, but some of these were afterward subjected to laparotomy. Of the 72 cases reduction was not secured in 54, or 75 per cent., and this represents the mortality of this method of treatment had not other means been subsequently employed.

Various experimenters, the speaker said, had shown that there was little risk of injuring a healthy infantile intestine by injecting fluid under a hydrostatic pressure of six pounds to the square inch, but when the gut is constricted the conditions are very different, even when the disorder has lasted only a few hours. Battey and Mole have proved by experiment that water under moderate pressure can be made to pass the ileocæcal valve when no obstruction is present, and Mole has shown that if 1½ pints of water are injected under a pressure of 1½ pounds to the square inch into an infantile colon, the intestine will be fully distended and the fluid will pass the valve. The author said that while he could not bring himself to favor treatment of infantile intussusception by enemata or inflation after having studied this series of cases, still, if one desired to resort to intestinal distention, at least 1½ pints of tepid saline solution should be placed in a reservoir elevated not more than three feet, and injected into the bowel. If one trial of this method did not reduce the invagination, the method should be at once abandoned. If reduction has apparently taken place, the child should be kept quiet by other means than opiates or motion, for the opiates tend to mask the symptoms indicative of a return of the invagination. The author then quoted the expressed views of a number of well-known surgeons to emphasize still further what the cases presented in the paper taught, viz., that intestinal distention was uncertain, unreliable, and dangerous.

Turning next to a consideration of the cases treated by laparotomy, it was shown that of the 64 cases so treated 43 had terminated fatally, thus giving a mortality of 67.2 per cent. In the successful cases the average age of the patients was 6½ months; in the fatal cases it was 5 months. In the successful cases the operation had been done on an average at the forty-fourth hour from the onset of the acute trouble; in the fatal ones, the operation had not been done until the one hundred and second hour. If the cases in which the bowel was incised or excised were excluded, there would remain 45 cases, 24 of which were fatal. This would reduce the mortality to 53.4 per cent; but even this the author did not consider represented the risk from this treatment at the present time, owing to improvements in the technique of intestinal surgery. On this account he would exclude all cases occurring prior to 1890, which would leave 18 cases of infantile intussusception treated by laparotomy, with 4 deaths, or a mortality of 22.2 per cent.

As regards the treatment itself, he said that it was foolish to operate on a child in collapse; it should first be stimulated until reaction had set in. Only a very short incision was necessary. The best method of reducing the invagination was by encircling the tumor below its apex by the finger and thumb, while the intussuscipiens or sheath is held a few inches lower down, and the apex of the tumor pushed upward without making any traction from above the tumor. If it should happen in the future that after doing a laparotomy it was found that the invagination was irreducible, the best method of meeting this formidable complication, in his opinion, was by the method devised by the late Prof. H. Widenham Maunsell. It should be remembered that acute intussusception was really a form of strangulated hernia; that the subacute variety was like an irreducible hernia; and that by laparotomy performed within the first forty-eight hours 78 per cent. of the cases should recover.

DR. A. JACOBI said that the reported cases were exceedingly few in proportion to the number of cases that must have occurred. Invagination of the intestine was more apt to occur in infants than in older subjects, both on account of the looser attachment of the mesentery and the greater exposure of this region of the body to external violence. He considered the condition largely a preventable one. Thus many of these children, it would be found, had suffered for a long time previously from constipation or diarrhœa. In the former case, the straining incident to having a stool was, in all probability, an exciting cause of intussusception under certain circumstances; while in the case of protracted diarrhœa, the deeper tissues of the bowel becoming involved in the disease-process, localized peritonitis and spots of thickening are produced. Regarding treatment, the speaker expressed his belief that if enemata, correctly employed, failed to effect reduction in the course of a few hours, a surgeon should be summoned. He had come to the conclusion that it was not only safer, but better, not to employ a greater water-pressure than one to one and a half feet. With such moderate pressure a larger quantity of fluid could be introduced into the intestine. He had always been in the habit of prescribing opiates for children immediately after reduction of the invagination had been effected, in order to keep them quiet. In one reported case in which the invagination recurred many times, he was of the opinion that this might have been prevented by the use of opiates.

DR. B. FARQUHAR CURTIS said that in 1887 he had collected some statistics regarding intussusception, which showed that in the case of both infants and adults the mortality was 76 per cent. Additional and more recent statistics had reduced this rate to 58 per cent. He

thought we would be doing very well if we saved one child in two or three. He did not think there had been such a change in the technique of the operation in the last few years to account for this reduction in the mortality; it was more probably due to an earlier resort to operation. It was well to remember that this was a class of cases in which it was eminently wise to call in the surgeon at an early stage, for counsel if not for operation. Where there was an acute onset, the operation should not be delayed. It was hardly fair to convey the impression that laparotomy was not followed by a recurrence of the invagination—that this was only seen after intestinal distention—for a number of such cases of recurrence have been recorded as following laparotomy. An enema, in his opinion, should be tried only once in these cases of infantile intussusception, and should be administered under an anæsthetic, and with a "head" not exceeding three feet. Where laparotomy was indicated, it should be performed very quickly, through a very short incision, and the reduction of the invagination effected within the abdomen.

DR. J. LEWIS SMITH said that in differentiating between the stools of dysentery and those of intussusception it should be remembered that after the first few hours all fecal matter was absent from the stools in cases of intussusception. He had successfully employed both inflation and fluid enemata in the treatment of infantile intussusception, but had been convinced of the greater efficacy of the latter. In his experience there had not been a previous history of chronic diarrhœa in cases of intussusception occurring in infants between six months and one year old.

DR. R. VAN SANTVOORD said that as some believed that infantile colic was really a form of mild and transitory intussusception, the importance of promptly treating this condition, and by the careful use of opiates or other measures controlling the movements of the bowel, became manifest.

DR. WIGGIN, in closing the discussion, said that he had objected to the use of opium in these cases chiefly on account of it masking the early symptoms indicating that there had been a return of the invagination. He would again emphasize and contrast the time at which the successful and unsuccessful cases treated by intestinal distention had come under observation, as indicating the great danger of delay. The same observation applied with equal force to the laparotomy-cases reported. A very short incision was all that was necessary. He did not think that in infants laparotomy had often been followed by a recurrence.

THE LOUISVILLE CLINICAL SOCIETY.

BY W. H. WATHEN, M.D., LL.D.

OVARIAN CYSTOMA.

CASE I.—A year ago a doctor consulted me about a woman who had an abdominal enlargement which he had diagnosticated an ovarian tumor, but the history was peculiar, in that she claimed the tumor had several times nearly disappeared. Six months ago she came to the city to see me, and I diagnosticated an ovarian cystoma, and recommended an operation. She repeated to me the history of the case, claiming that the tumor had almost entirely disappeared upon several occasions, and now claims that it has nearly disappeared once since she consulted me.

I operated ten days ago and found a multilocular ovarian cystoma, containing more than three gallons of liquid in all the loculi, with extensive adhesions to the anterior abdominal wall. The only interesting feature in the case is that this is a positive illustration of the fact that we cannot rely upon the statement of our patients in regard to the progress of any form of tumor, because we all know that this tumor could never have disappeared or have become lessened, and it was only in the imagination of the patient that it did so. I have had one case where a large tumor did disappear and return, but that was a parovarian cyst, unilocular, with thin walls, which evidently ruptured; the contents being bland, were absorbed into the system and eliminated through the excretory organs. The tumor returned afterward, and fifteen years subsequent to the rupture was removed by me, and weighed fifty pounds.

INTRALIGAMENTOUS MYOMA.

CASE II.—The second specimen is a uterine myoma, removed two weeks ago from a lady who had noticed the presence of a tumor for two or three years, and for a year had suffered with intense pain from its presence. Examination revealed the fact that the tumor was firmly fixed in the pelvis, almost immovably so; the diagnosis of intraligamentous or retroperitoneal myoma was made. Believing that the tumor might be removed by the vagina by morcellation, though the vagina was very small, the woman never having given birth to a child, the vagina was prepared for a vaginal hysterectomy, and at the same time the abdomen for an abdominal hysterectomy. After the woman was under the anæsthetic an examination convinced me that it would be unwise to try to remove the tumor through the vagina, and that it would be best to deal with it from above; but, as the uterine arteries could be ligated without difficulty from below, I ligated both arteries through the vagina. I then opened the abdomen and found that the tumor was so firmly wedged into the pelvis that it could not with strong vulsellum forceps be carried up more than half an inch. The tumor, which has shrunken since being put in alcohol, was large enough to fill the pelvis to the walls upon each side, and was an intraligamentous myoma arising from the lower and anterior part of the body of the uterus at its junction with the cervix. There were no broad ligaments, properly speaking, but the ovaries and tubes were well above upon each side, so that I was able to throw a ligature around the ovarian arteries. Then an incision was made around the entire mass, about one and one-half inches from the top of the tumor, and the tumor and uterus enucleated, the uterus being divided at its junction with the cervix. When the enucleation was completed there was a large cup-shaped cavity extending down to the vagina, and outward to the pelvic wall. The capsule was preserved, and the best way to treat the case was manifestly after the fashion of Senn, which consists in stitching the capsule in the lower part of the abdominal incision, then tamponing it with iodoform-gauze. This was done and the wound closed. The woman was very nervous, with a bad heart; her pulse was exceedingly rapid during the operation, and remained from 120 to 160 for five days, not from shock of the operation, but from the generally enfeebled con-

dition of her system. She has improved continuously, and is now sitting up.

SUSPENSIO-UTERI BY VENTRAL FIXATION.

CASE III.—The next specimens were removed from two women; operation practically the same in each case, but not for exactly the same purpose. A lady from Galesburg, Ill., single, aged twenty-five years, consulted me last fall for the purpose of getting me to remove her uterus, she having been under the treatment of many doctors and deriving no benefit. She had become almost a confirmed invalid, suffering intensely during her menstrual periods, but never free from pain, and practically unable to do anything. I found she had a high fever, which could not result from her pelvic trouble, and sent her home. The case proved to be one of typhoid fever, and she finally recovered. She returned to the city recently, and upon examination I found her uterus completely retroflexed and wedged down in the pelvis, with tenderness in the ovarian and tubal regions, and some enlargement. I operated upon her through the abdomen, bringing the uterus, tubes, and ovaries from their retroplaced position, and found the normal structure of both ovaries entirely destroyed. Both ovaries and tubes were removed and the uterus fixed to the abdominal wall by silk sutures upon each side, which united each cornu of the uterus to the peritoneum, the knotted ends of the sutures being buried in subperitoneal fat. Then another suture was introduced through the abdominal walls and the fundus of the uterus and tied externally. The peritoneum was scarified so that adhesion would be more perfect. The woman has had none of her nervous trouble since, and the uterus is firmly fixed.

CASE IV.—The other specimens were removed from a woman in this city. She also had a retroflexed uterus which could not be returned to its normal position and held there by a pessary, as I had tested this method for a long while. The ovarian and tubal regions were exceedingly tender; she suffered from dysmenorrhœa, and there was always pain in the pelvic region. I could detect no enlargement of the ovaries or tubes. In fact, the pain she suffered, while it was severe and while she insisted upon an operation, was not sufficient in itself alone to demand the operation; but she had for many years suffered from a facial eruption which at times disfigured her so much that she had felt unless she could be cured she would rather die than live. And she believed that the continuance of the eruption was largely due to the trouble with her womb or with her ovaries and tubes, and that the eruption was worse during her periods of pain, etc. After having talked about the operation for two years she, with the approval of her mother, determined that it should be performed, and I consented to do so. This patient had been treated by several of our best skin specialists in the city, including Drs. Bloom, Orendorf, and others. She had also consulted Dr. Mathews concerning some rectal trouble. I operated upon her after the same fashion as in the previous case, removing both ovaries and tubes, which were found to be not so badly diseased as in the other case, but considerably diseased—enough so to cause intense pain during menstruation and more or less pain at all times. She has made a good recovery; the eruption is decidedly better. What will be the permanent result of course the future will have to decide. The operation was performed three weeks ago. I must say that the operation was performed more with the hope of benefiting the eruption than for the purpose of curing her of pain, though the pain was severe.

FIBRO-SARCOMA OF VAGINAL WALL.

CASE V.—About six months ago Dr. Weidner called me in consultation to see a woman pregnant in about eight months. There was a tumor in the left vaginal wall just below the uterus about as large as a turkey's egg. We did nothing, and the woman gave birth to the child, as I understand, without serious trouble. The tumor remained, not enlarging appreciably. Some weeks ago she insisted upon having it removed, and Dr. Weidner referred her to me. She was taken to the Kentucky School of Medicine Hospital and we removed the tumor by dividing the vaginal wall and enucleating it. The tumor had the appearance of being a fibroid. Dr. Weidner has since examined the specimen and pronounces it a fibro-sarcoma, and reports that he thinks there is a recurrence of the trouble. This specimen is interesting in view of the fact that we have very few solid tumors connected with the vagina, and especially few malignant tumors, unless they be carcinomata, extending to the vagina from the uterus or the vulva.

DISCUSSION.

DR. J. M. MATHEWS: I wish only to refer to the fourth case Dr. Wathen has spoken of. If the members were as familiar with the case as I am, I know they would all regard it as an extremely interesting one. As far back as six years ago the young lady was referred to me with the most violent eczema of the face that I have ever seen, and in her own good way—she is much above the average in intelligence and is connected with a very nice family—she said she believed that the eczema was due to her rectum; that she had difficulty in having an action of the bowels; that she was thoroughly constipated; had to strain at stool, etc., but great stress was put upon the violent eczema of the face. This was distressing, much more so than Dr. Wathen has mentioned. At night the itching was so intense that she would scratch the blood out of her face; she could not sleep, and being a young girl she was diffident about going into society, because, as Dr. Wathen has stated, of the terrible appearance that she presented. But she told me she could put up with that were it not for the torment she passed through, especially at night. To give her some relief, thinking perhaps it might be due to neurotic influences, that she might be correct in thinking the rectum had something to do with it, I chloroformed her and divulsed the sphincter muscle, hoping by that method to relieve some reflex process and to re-establish normal action of the bowel, etc., but signally failed. She consulted me on several occasions for prescriptions for her constipation, etc., but in the interim I referred her to Dr. Bloom, who treated her how long I do not know. I saw her during the whole time up to perhaps a year ago semi-occasionally, being interested in the patient obtaining permanent relief if possible. She consulted many physicians, not only here but abroad, in New York, etc., going through various forms of treatment without much benefit. I

always believed it was neurotic; where the source of irritation was I, of course, am unable to say. Happening in the St. Joseph Infirmary operating-room recently a patient was wheeled in by Dr. Wathen's assistants, and I recognized this girl. I was so much impressed, not knowing that she was going to have a laparotomy performed, or that she had any trouble with the abdomen, by the kindness of Dr. Wathen I witnessed the operation, and went so far as to say to him that I hoped he would find disease of the ovaries or tubes, the removal of which would result in benefit, as she had been in torment for years. I stepped into her room this afternoon; she has made a perfect recovery from the operation, and told me that her face had given her no trouble since the operation was performed, three weeks ago. If it does succeed in clearing up this terrible eczema, it will open a subject for discussion. It has been the most persistent case that I have ever seen, and I only hope that the operation may prove of benefit.

DR. CARL WEIDNER: I will only speak concerning the last case reported by Dr. Wathen—the growth removed from the vaginal wall. Upon examination the specimen proved to be a sarcoma of rather large cell, being of the spindle-cell variety. The reason I think there is going to be a recurrence of the trouble is because I have examined the patient and find a rather swollen, tender condition, and some irregular excrescences about the line of the incision; second, the nature of the trouble; third, the continued debilitated state of the woman. She has not regained strength, and is suffering more or less pain locally and in the back. The case has been interesting, if for no other reason than the facility with which delivery was accomplished, considering the presence of the growth in the vagina at the time. I anticipated considerable trouble during labor, and this is one reason why I called Dr. Wathen to see the case. I waited for the occurrence with a great deal of anxiety, and after repeated failures was summoned hurriedly one day, and when I reached the house the child was born, the mother having had comparatively little trouble. However, it was a very small child.

DR. P. GUNTERMANN asked why Dr. Wathen removed the ovaries and tubes in two cases reported, stitching the uterus to the abdominal walls, when disease of the uterus had been diagnosticated. He understood the doctor to say it was a very simple matter to take out the uterus either from below or above, but in this case he had removed the ovaries and tubes and left the diseased uterus stitched to the abdominal wall.

DR. LOUIS FRANK: The second case Dr. Wathen reports is to me the most interesting in the series. This tumor seems to spring from the upper portion of the uterus. Tumors springing from the lower lateral part of the uterus, as a rule, burrow between the broad ligaments retroperitoneally, and those springing from the upper portion of the uterus grow outward in the direction of least resistance. This tumor must have begun at least between the folds of the ligament, probably just below where the tube enters the uterus.

As to the method of treating wound-cavities after removal of this sort of tumor of the uterus, I think by stitching up the sac which we have left, as has been recommended by some authorities, the denuded surface draining through the vagina, as could very readily have been done in this case, we secure the most rapid convalescence. It might also have been advisable to remove the remainder of the cervix, as the uterine arteries had already been ligated. Whether this would have simplified the after-treatment of the case I do not know. I would like to ask Dr. Wathen, in closing the discussion, to state whether there was much hemorrhage during the operation. If not, then the rapid pulse might be accounted for by the fact that we frequently have, if a fibroid tumor has existed for a great length of time, fatty degeneration of the heart. This, in connection with the operative procedure, and the shock which we know results to the nervous system, would probably account for the rapidity of the pulse subsequent to the operation.

In the next case reported, the connection between the ovarian disease and skin-lesion is an interesting one. It would be interesting to know the exact condition which existed in the ovaries. I rather question, however, though I confess I know little concerning skin-diseases, that there could be any connection whatsoever between ovarian disease, or disease anywhere, and eczema. We know that eczema sometimes persists for years. I have seen cases of facial eczema persist for such a length of time that the face assumed an appearance simulating leprosy—the so-called *facies leonis*—from the extreme induration and thickening of the skin.

DR. I. N. BLOOM: Referring to the fourth case reported by Dr. Wathen: Ten years ago this month a young lady came to me suffering from a very severe eczema of the face, also with acne; the two at times appeared together. When the eczema was most marked the acne was less so, and *vice versa*. During the four months that she was under my care, at times she improved to such an extent that I thought her ultimate recovery was assured; but an exacerbation would occur. The young lady became considerably discouraged; and at the end of four months, as she was not cured, decided to try someone else, and applied to my friend, Dr. McGuire, who reported, at the end of a months' treatment, that she was wonderfully improved; then she had another exacerbation. She continued under Dr. McGuire's treatment, however, until he left the city. It seems that some time afterward she applied to Dr. Mathews for treatment, as he has stated, with no better results, as far as the eczema was concerned. She then seems to have passed into the hands of Dr. Wathen, who is the first operator in the world, I believe, to perform a laparotomy for the cure of eczema. If he is successful, he will have established a new method for curing one of the most persistent and obstinate diseases that we are called upon to treat. The time (three weeks) is rather short. It is not at all surprising that, after having had a laparotomy performed upon her, the patient should not complain of itching of the face; but three weeks is too short a time to demonstrate the cure of eczema. Four months would be considered a short time in which to effect a cure of the disease when as long standing as in this case—ten years. At the time this patient was under my care she had absolutely no symptoms referable to disease of the sexual organs. I took occasion to make careful inquiry into her history, and studied every feature very thoroughly. I remember the case as distinctly as if it had occurred but yesterday—more distinctly, in fact, because I utterly failed to cure the eczema; and, as I have stated, at that time there were

no symptoms referable to the reproductive organs. I propose to ask the doctor why he thinks the operation that has been performed will effect a cure of the eczema. I would like to have had him dwell a little longer upon the disease of the ovaries which he found. Dr. Mathews spoke particularly of the disease of one ovary, and the reporter mentioned that the ovaries *were diseased*, but less so than the preceding case, with a similar condition of the uterus. I would like to ask the doctor whether the disease of the ovaries, when brought to view, was sufficient to call for their removal, or whether the retroflexion of the uterus was sufficient to demand an operation as severe as the one he performed. The case is an interesting one, but is not entirely unique.

I regret to say that I have under my care at the present time a young lady with an exactly similar condition of affairs. I have been treating her six months, and the course of treatment has been the same as employed ten years ago in the case Dr. Wathen has reported. Had I known that Dr. Wathen was to operate upon the case I would have brought a letter received two or three days ago, which would serve to illustrate a few points. The young lady that I am now treating has exactly the same condition of affairs; she is a robust, healthy girl; good surroundings, fairly well educated. She has a severe facial eczema accompanied by intense itching. Improvement at times has been marked, and encouraged by that she has continued treatment, although there have been periods of exacerbation when the case would appear altogether hopeless. Her last letter, received yesterday, states that she is greatly improved, and asks whether she shall come to see me at her regular time. This young lady, accompanied by her brother, has visited me once each month for six or eight months. I have inquired into her history thoroughly, and there is absolutely no symptom referable to the uterus or any other organ. The stomach and intestines are most frequently affected in these cases, not the sexual organs. She says if her face were well she would be as healthy as it is possible for anyone to be. In another case exactly similar to the two preceding, in which I am glad to say I had a more fortunate termination, the trouble had existed for a great many years and was thought by some who had seen it to be leprosy. In referring the case to me Dr. Dugan sent me a few hastily written lines, at the end of which he asked, "Is this leprosy?" A complete cure resulted under three months' treatment, the case being one of simple eczema.

DR. J. M. MATHEWS: I would like to ask Dr. Bloom if the neurotic element plays any part in the development of eczema.

DR. I. N. BLOOM: I do not know what is meant by the neurotic element. If you mean the reflexes, I should say it is extremely rare, and I doubt if it ever has any great influence.

DR. J. M. MATHEWS: In other words, suppose there is a tendency on the part of a patient to eczema, perhaps very slight—is it not a fact that the neurotic element will so increase that disease as to make it permanent? If there is disease, be it eczema or whatever you may choose to call it, and there is a local source of irritation, I do not care where it is, in the bowels, in the uterus, or in the ovaries, is it not true if you have a local seat of irritation, that this, through the neurotic tendency, will increase the eczema to such a degree as to make it a persistent affection so long as you have the local source of irritation?

DR. I. N. BLOOM: Anything that diminishes the vitality of a person, such as diseases of any kind, would naturally tend to delay the cure of eczema; but I maintain that it is not through any neurotic element, but simply an impaired vitality. Consequently, if stomach-trouble of a chronic nature developed during the course of an eczema or previous to it, the eczema would probably be rendered worse thereby. If I were treating such a patient, I would endeavor to cure the stomach-trouble as quickly as possible, just as I would cure acne or any other disease where it was coincident with eczema; at the same time I would say that one is entirely independent of the other. Eczema perhaps more frequently than otherwise affects strong, robust, healthy persons, which would be a point against the influence of any form of reflex action.

DR. W. H. WATHEN: Dr. Bloom, in his answer to Dr. Mathews' inquiry, has stated the main reasons why I consented to remove the ovaries in the fourth case I reported. Here was a woman who believed for a long while, so she reports, that the eczema has been made worse and continued largely because of her menstrual functions being interfered with, and the pain which she has suffered.[1] This woman has had since I have known her imperfect nutrition, and I am reasonably sure from a rather extended experience in operating for the removal of ovaries that her general nutrition will be very much improved.

Knowing that to be true, then, from Dr. Bloom's own statement, her local condition upon the face would be more amenable to the ordinary treatment for eczema. The case has positively shown that it has resisted the efforts of all the dermatologists who have treated her, and that the condition is not amenable to the treatment they have pursued, unless something be done to improve her nutrition. The operation for removal of the ovaries was not performed for the purpose of curing the eczema, nor was she promised that she would be benefited, but was discouraged against having the ovaries removed at all; and was finally only told that it might benefit her by improving her general nutrition. But this woman had enough disease about the pelvis to justify a laparotomy independent of eczema; and the operation of laparotomy and anterior fixation of the uterus, where it is retroplaced and cannot be returned and held in position by a pessary, is one that is so well recognized that no intelligent laparotomist would take issue at all. In this case, then, the operation was justifiable for the purpose of fastening the uterus to the abdominal wall, and I did not know when I began operating that I would remove the ovaries, thinking that probably much or most of the pelvic irritation and painful menstruation was due to the retroplaced uterus, but when the ovaries were exposed, and one of them found considerably diseased and the other not healthy, as she had insisted upon the removal of the ovaries, and when Dr. Mathews, who was present, insisted that they ought to be removed, because she would never want to marry, they were removed. I do not know with what this woman suffered ten years ago, because I had no opportunity of ascertaining.

[1] If that be true, then the removal of these structures ought to act beneficially upon the condition with which she has suffered.